LAP-3

The Learning Accomplishment Profile Third Edition

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Examiner's Manual & Technical Report

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Chapel Hill Training Outreach Project, Inc.
Kaplan Early Learning Company

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Introduction:
The Learning Accomplishment Profile-Third Edition (LAP-3)

Purpose

The *Learning Accomplishment Profile-Third Edition* (*LAP-3*) is the newest edition of the *Learning Accomplishment Profile* (*LAP*), a criterion-referenced assessment that provides a systematic method for observing the development of children functioning in the 36-72 month age range. The *LAP-3* is the culmination of revisions and research designed to improve the quality and usability of the instrument. Like its predecessors, the purpose of the *LAP-3* is to assist teachers, clinicians, and parents in assessing individual skill development in seven domains of development: gross motor, fine motor, pre-writing, cognitive, language, self-help, and personal/social. The results of the *LAP-3* can be used to generate a detailed picture of a child's developmental progress in the seven domains so that individualized, developmentally appropriate activities can be planned and implemented. The *LAP-3* can be used with children with typical and atypical development.

More than 30 years have passed since Anne R. Sanford developed the first edition of the LAP. At that time, the contents of the *LAP* represented the most current theories and research on early child development. Though most of the behaviors assessed in the original *LAP* continue to reflect key milestones in early childhood development, theoretical approaches and recent research, especially related to language and literacy, as well as changes in the general population of young children stimulated the need for a re-examination of the contents and organization of the *LAP-R* (the second edition of the *LAP*) and the creation of the *LAP-3*. The following questions guided the revisions and research of the *LAP-3*:

- Do the items adequately represent the content of each developmental domain?
- Are the developmental age categories appropriately divided?
- Are items placed from least difficult to most difficult within each developmental age range?
- Do the materials reflect developmentally appropriate practices and are they attractive to young children?
- What are the psychometric properties of the instrument? Is it reliable and valid?
- Does the instrument provide meaningful results for children of diverse cultural, socioeconomic, and family backgrounds?
- Does the instrument function appropriately for children with atypical development?

Conceptual Framework

The *LAP* was designed to observe the development of individual children by providing tasks or situations typical of young children's development that would interest the child and stimulate an observable response as stated by Sanford (1981), "[the *LAP* addresses] the need

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for a structured process of assessment which specifies prerequisite skills and facilitates a task analysis approach to successful learning." This basic philosophical thrust of the original *LAP* has been maintained throughout each subsequent edition. Thus, it is up to the teacher, clinician, or caregiver to analyze the results and ascertain its appropriateness for each child. Sanford also stressed the importance of considering environmental factors at home and school in determining the relevance of *LAP* assessment results.

The *LAP-3's* comprehensive approach to the total development of the young child addresses 383 samples of behavior. The "critical" nature of these items will vary with the individual needs of children. A behavior that is perceived as a "vital" objective for one youngster may be less relevant for another. The ultimate challenge and purpose of assessment is the implementation of individual goals in a developmentally appropriate curriculum that fosters learning. It is our hope that this revised assessment instrument will facilitate this process.

History of the *LAP-3*

In 1969, the Chapel Hill Training Outreach Project was established. The primary focus of the early years of the organization was to develop methods and materials for the effective demonstration of high quality services to young children with disabilities and their families. Anne R. Sanford developed the first *Learning Accomplishment Profile* (*LAP*) during this time. Items on the *LAP* were drawn from normative-based measures for children birth to six years old.

In 1981, Anne R. Sanford and Janet G. Zelman revised the original *LAP*. Known as the *LAP-R*, the most obvious difference between the *LAP-R* (the second edition of the *LAP*) and the original *LAP* assessment was the translation of general descriptors of developmental milestones into behavioral objectives. The purpose for these changes was to create a more precise edition of the *LAP* designed to increase its efficiency and reliability. Specific behaviors, materials, procedures, and criteria were incorporated into the second edition and duplication of items across developmental domains was mostly eliminated. Additional revisions of the *LAP-R* were completed in 1995. The purpose of these revisions was to clarify administration procedures, material requirements for each item, and scoring criteria.

From 2001-2003, revisions were made on the *LAP-R* to improve the existing instrument and create the *LAP-3*. In addition, research was conducted during this period to examine the reliability and validity of the revised instrument. Revisions included deleting outdated items (e.g., opens pop bottle with pry opener), clarifying items (e.g., "tells birthday" changed to "tells birthday [month and day]"), and adding new developmental milestones such as language and literacy items (e.g., reads 2 common words from familiar environment) based on recent work in child development and early childhood education (Bredekamp & Copple, 1997; Neuman, Copple, & Bredekamp, 2000; Neuman & Dickinson, 2001; Sulsby, 1989). Developmental age ranges were standardized to six-month increments and the placement of items across and within developmental age ranges was re-examined and changed, if needed, based on research results. Materials were updated and standardized also.

Unique Features

The *LAP-3* is a comprehensive, criterion-referenced measure designed for use by practitioners to assess the development of preschool children. Standardized materials, procedures, and criteria for determining a child's level of functioning are included for each item to help ensure consistent and accurate results. The *LAP-3* includes the following features.

- **Individualized approach.** The *LAP-3* is designed for assessing the development of individual children. The *LAP-3* may be administered in one or more sessions, depending on the needs of the child.

- **Developmentally appropriate content.** The content of the *LAP-3*, based on research in child development and early childhood education, is composed of developmental milestones arranged in chronological sequence in seven developmental domains: gross motor, fine motor, pre-writing, cognitive, language, self-help, and personal/social.

- **Age Range.** The *LAP-3* is appropriate for children functioning in the 36-72 month age range. Children with disabilities who are older than 72 months may be assessed using the *LAP-3* if observational data or other diagnostic evaluation data indicate they are functioning in the 36-72 month age range.

- **Administration Time.** Generally, it takes 1½ hours to administer the *LAP-3*. However, if a child is functioning significantly above or below age level, it may take longer to complete the full assessment.

- **Periodic and Ongoing Assessment**. The *LAP-3* may be administered at specified checkpoints (e.g., beginning-, middle-, end-of –year) and/or used for ongoing observation, depending on the purpose and goals for which it is being used. For example, at the beginning of the year, the *LAP-3* may be administered to obtain a baseline of a child's development. As the year progresses, users may opt to administered the complete assessment at specific points in time, or record the acquisition of new skills throughout the year.

Uses of the *LAP-3*

LAP-3 results can be applied in the following ways:

- To provide individual skill development information for planning developmentally appropriate activities at home and school.
- To provide supporting documentation of individual skill development for children with potential developmental delays or specific disabilities.
- To conduct research on preschool, kindergarten, or special needs children.

- To train teachers, paraprofessionals, clinicians, and parents on developmentally appropriate assessment practices.
- To assist early childhood programs in meeting national and state requirements (e.g., Head Start Child Outcomes, state standards)

Limitations of the *LAP-3*

As a criterion-referenced assessment, the *LAP-3* neither assigns a diagnostic label nor yields norm-referenced scores regarding a child's level of functioning. The information generated by the *LAP-3* can be used in conjunction with norm-referenced assessments when determining whether or not a child has a disability. In other words, it should not be used as the sole criterion to place a child in disabilities services.

User Qualifications

Trained teachers, paraprofessionals, clinicians, special educators, psychologists, occupational and physical therapists, speech-language pathologists, and others familiar with child development can administer the *LAP-3*. Although the *LAP-3* is a criterion-referenced instrument, care should be taken to follow specified administration guidelines in order to achieve the most accurate results. Thus, all users should be trained in appropriate administration procedures and scoring guidelines. The *Standards for Educational and Psychological Testing* (1999) recommends that test users "study and evaluate the materials provided by the test developer (p. 113)." The *Standards* especially emphasize knowing the purposes, administration procedures, and appropriateness of the assessment for specific populations, as well as the reliability and validity of the assessment.

Chapter 2
Development of the *LAP-3* Content

In this chapter, the principles of *The LAP System* are defined. Information about the content development of the *LAP-3* is described as well as the structure of the *LAP-3* components.

Underlying Principles of *The LAP System*

The LAP System is a comprehensive approach to understanding and facilitating the development of young children. This assessment and curriculum model is grounded in early childhood research that recognizes young children as active partners in the learning process by:

- Emphasizing the value of child choice and responsive teaching
- Promoting individualization and respect for each child's unique qualities
- Including activities to help children understand and respect diversity (culture, gender, abilities)
- Emphasizing the importance of family and community
- Promoting inclusion of children with disabilities.

The LAP System includes screening and assessment tools to generate a profile of individual development and provide a means of monitoring ongoing development; curriculum materials that promote effective and developmentally appropriate programming; and instructional materials that enhance parent involvement and provide guidance for important milestones in young children's lives. The *LAP-3* is one component of *The LAP System*.

LAP-3 Content

Because the *LAP-3* is a criterion-referenced assessment, its overall purpose is to provide an interpretative framework for understanding a child's development in specific content areas (Anastasi & Urbina, 1997; Gall, Borg, & Gall, 1996). The framework for the *LAP-3* is the age at which the majority of children can demonstrate particular behaviors. For example, by the time most children are 36 months old, they can run, speak in short sentences, and hold a writing tool well enough to scribble on a piece of paper. Thus, the goal of content analysis for the *LAP-3* was to include relevant items at each age level on which the majority of children (approximately 70% or higher) were able to demonstrate mastery. Because the *LAP-3* requires a basal and ceiling to be established, a limited number of items below the 70% goal were included to facilitate cut points at each age level and for the overall domain.

More than seventy percent of the content of the previous editions of the *LAP* was preserved in the third edition. However, items were changed, deleted, or added to strengthen the content coverage of each domain. The process used to make these changes is described below. The legitimate problem of assigning a behavior to one specific area of development continues to be challenging for test developers. While it is inappropriate to ignore overlap between areas

of development (e.g., cognition/language or fine motor/self-help), the authors believe that for purposes of programming, the instrument should focus on the *primary* developmental area reflected by a specific behavior.

Original Sources

Items on the original *LAP* were drawn from the work of 27 early childhood researchers as depicted in Table 1. Users should keep in mind that the normative developmental age assigned to a specific item often varies among reputable research-based sources. Therefore, while the items reflect documented behaviors of young children, the developmental ages should be viewed as "approximate" in nature (See appendix for complete citations).

Table 1. Original Sources for *LAP-3* Items

Reference Code	Title of Instrument	Author
A&B	Developmental Profile	Alpern, G., & Boll, T.
BANGS	Birth to Three Developmental Scale	Bangs, T.E. and Dobson, S.
BAY	Bayley Scales of Infant Development	Bayley, N.
CAP	The First Twelve Months of Life: Your Baby's Growth Month-By-Month	Caplan, F. (Ed)
CAT	The Measurement of Intelligence of Infants and Young Children	Cattell, P.
CEC	Communicative Evaluation Chart	Anderson, R.M., & Matheny, P.
COL	Pediatric Assessment of Self-Care Activities	Coley, I.L.
C&G	Developmental Resource	Cohen, M., & Gross, P.
DOLL	Preschool Attainment Record & Vineland Social Maturity Scale	Doll, E. A.
FRANK	Denver Developmental Screening Test	Frankenburg, W. K. and Dodds, J. B.
GES	The First Five Years of Life: A Guide to the Study of the Preschool Child	Gesell, A. L.
HUR	Child Development (5th ed.)	Hurlock, E. B.
ILL	The Development of the Infant and Young Child	Illingworth, R. S.
K & P	Gesell and Armatruda's Developmental Diagnosis	Knoblock, H. and Pasamanick, B. (Eds.)
MPS	Guide for Administering the Merrill-Palmer Scale of Mental Tests	Stutsman, R.
MPDPS	Maunder Pupil Developmental Progress Scale	Maunder County Office of Education
PLS	Preschool Language Scale	Zimmerman, I., Steiner, V., & Evatt, R.
S&L	Assessment by Behavior Rating Manual	Sharp, E., & Loumeau, C.
SHER	The Developmental Progress of Infants and Young Children	Sheridan, M. D.

Reference Code	Title of Instrument	Author
SICD	Sequenced Inventory of Communication Development	Hendrick. D., Prather, E., & Tobin, A.
SLO	Slosson Intelligence Test	Slosson, R. L.
SSC	Skills Sequence Checklist	Unknown
STEP	Sequential Testing and Educational Programming	Greenberger, S., & Thum, S.
STOTT	Child Development	Stott, L.
TER	Measuring Intelligence	Terman, Lewis M. and Merrill, Maud A.
VAN	Teaching Physical Education in Elementary Schools	Vannier, M., Foster, M., and Gallahue, D.L.
W&L	Communicative Disorders	Weiss, C., & Lillywhite, H.

Content Analysis Process

While retaining the majority of items from the original sources as the core of the *LAP-3*, an examination of the content of the *LAP-R* was undertaken to identify items or areas needing revisions. Throughout the revision process, the overall goals of the *LAP-3* project served as a guide. These goals were to:

- Maintain the basic qualities and philosophical basis of the original *LAP*
- Improve the content of each domain
- Update developmental age categories
- Arrange order of items to reflect typical/expected developmental sequence
- Update and improve materials
- Conduct reliability and validity studies
- Ensure appropriate content for children of diverse cultural, socioeconomic, and family backgrounds
- Update the *LAP*'s usefulness for children with atypical development.

Item Review. The first step in the revision process was a review of the content of each item in the LAP-R to examine the developmental appropriateness of the item, its developmental age placement, and the order of the items within each developmental age range. A review of current literature (Allen & Schwartz, 2001; Bagnato, Neisworth, & Munson, 1997; Baroody, A. J., 2000; Bredekamp & Copple, 1997; Hardin, Lohr, & Wesley, 1996; Head Start Bureau, 2000; Kowalski, K., K. Pretti-Frontczak, et al., 2001; Martens, P. A., 1999; Neuman, Copple, & Bredekamp, 2000; Ross, M. E., 2000; Sulsby, 1989) was conducted to determine if items on the LAP-R domains reflected the intent of the overall domain (e.g., gross motor skill), were relevant to the current population (e.g., opens pop bottle with pry opener as a fine motor item was deemed outdated), and if new items were needed to address gaps in the domain content (e.g., additional items to assess literacy skills). Items from the Head Start Child Outcomes were particularly considered during item analysis as an example of program

guidelines related to child development. Other items were deleted because they required materials that were difficult for the assessor to transport (e.g., large cardboard box). In addition, the placement of the items in a developmental age range and their order within the developmental age range was analyzed and adjustments made as needed.

Expert Review. The next step in the revision process included a content review of the revised instrument by a panel composed of experts in child development and early childhood education. Reviewers were instructed to evaluate each item of the assessment according to the following questions:

1. Is the behavior appropriate for a developmental assessment?
2. Is the age assignment appropriate? If no, please suggest an age level you feel is more appropriate?
3. Are the materials, procedures, and criteria clearly written? If not, please note any changes.

The expert reviewers identified gaps, contradictions, satisfactory, and unsatisfactory items. The majority of the items were viewed as appropriate for the domain and developmental age range. Items deeded as unsatisfactory were dropped or moved as recommended by the expert reviewers. It was also decided that since the purpose of the *LAP-3* is to identify skill development for children 36-72 months old, the number of items below 36 months would be reduced when possible.

Items on *LAP-3*

As a result of both the item review and the expert review, a number of items were added, deleted, or moved to form the *LAP-3*. The *LAP-3* was then administered to the 300 children in Phase 1 of the study. Individual item analysis was then conducted to determine the difficulty level of each item based on the pass rates for children of different ages. As needed, items in each domain were re-arranged within age levels from least to most difficult or moved to a different age level to better accommodate the basal and ceiling format of the assessment. In the second phase, the *LAP-3* was administered to 63 children using the revised order of items based on the analysis of the Phase 1 data to verify that items were correctly arranged within each domain. Individual item analysis was then conducted for each item using the Phase 2 data. A small number of items (25) were further re-arranged based on item difficulty level for the final version of the *LAP-3*. Table 2 below includes a list of new or moved items on the *LAP-3*. This list is followed by Table 3, which lists items that were deleted from the previous edition, the *LAP-R*.

Table 2. LAP-3 New and Moved Items

Domain	Item	Description	Domain	Item	Description
Gross Motor	6	Walks up and down stairs, hand held	**Cognitive (cont.)**	80	Points to left and right sides of body (moved from Language)
	20	Kicks large rolling ball (from standing still position)		86	Follows right and left double directions (moved from language
	52	Throws small ball at target			
Fine Motor			**Language**		
	12	Weaves string randomly through holes in sewing board		4	Points to pictures in book
	24	Punches individual computer keys		18	Asks why, where, when and what questions
	37	Builds 4 steps with 10 small blocks from model		19	Listens "attentively" to stories (moved from Personal/Social)
	38	Punches hole in paper with handheld paper punch		23	Follows 2-step directions in proper sequence
	40	Builds structure with blocks		29	Shows front of book
Pre-writing				31	Discriminates letters
	16	Uses a variety of tools to write or draw		33	Points to where reader begins in book
	26	Prints any 2 letters without model		35	Tells name of 2 printed letters
	30	Uses a variety of writing tools for writing letters or numerals		37	Selects 4 (out of 5) pictures related to a sentence read aloud
Cognitive				42	"Reads" favorite books independently
	3	Places "all" blocks in a cup		44	Tells name of printed letters in own name
	5	Completes 3-piece formboard (moved from Fine Motor)		45	Discriminates printed words
	10	Responds to concepts of empty and full (reworded)		46	Participates in sustained conversations with peers
	17	Adapts to formboard reversal (moved from Fine Motor)		49	Reads 2 common words from familiar environment (e.g., signs, labels)
	20	Responds to concepts of long and short (reworded)		53	"Reads" books with friends during play
	25	Completes 3-piece puzzle (moved from Fine Motor)		56	Tells name of 10 printed letters
	26	Counts 3 objects		57	Points to pictured print material by use
	36	Verbalizes understanding of motion for 3 different items		58	Points to title of book
	37	Completes 6-piece puzzle (non-insert type)		60	Tells beginning sounds
	42	Names 8 colors		61	Arranges picture story in sequential order (moved from Cognitive)
	43	Names the consequence for 2 actions		62	Tells name of 26 capital letters (moved from cognitive)
	47	Tells use of senses (moved from Language)		63	Tells beginning sounds in printed words
	49	Names the cause for 3 given events		64	Identifies similar beginning sounds
	59	Measures paper with non-standard unit		65	Identifies author of book
	60	Completes bead pattern		66	Discriminates words from Nonsense syllables
	61	Predicts and tests hypothesis		68	Reads 5 printed words
	76	Verbalizes understanding of 1 season		69	Identifies similar ending sounds

LAP-3 New and Moved Items (cont.)

Domain	Item	Description
Self Help		
	6	Asks for food, drink, or toilet when needed (moved from Language)
	19	Demonstrates caution and avoids potentially harmful objects or Activities
	27	Feeds self with spoon or fork (held with fingers) reworded
	36	Dresses completely without Assistance
	45	Answers questions involving personal safety (e.g., fire, traffic/pedestrian safety)
	48	Fastens own seatbelt
Personal/Social		
	5	Follows directions for some routine activities
	6	Refers to self by name (moved from Language)
	8	Interacts with familiar adults
	9	Tells first name
	10	Indicates preferences in peer interactions
	14	Initiates interactions with familiar adults
	27	Follows classroom rules
	30	Sympathizes with peers who are upset or hurt
	31	Expresses own feelings verbally
	34	Assists peers in need
	35	Responds positively to accomplishments of peers
	37	Engages in exchange of ideas with peers
	44	Shows understanding and respect for individual differences

Table 3. LAP-R Deleted Items

Domain	Item	Description
Gross Motor	6	Creeps backward down stairs
	10	Climbs into paper carton
	20	Carries a tray
	22	Carries cup of water
	48	Carries 10-pound sack
Fine Motor		
	13	Stirs liquid with spoon
	38	Inserts paper in ring binder
	40	Scrapes carrot with food scraper
	42	Opens pop bottle with pry opener
Pre-Writing		
	5	Imitates V stroke
Cognitive		
	2	Obtains object from bottle
	8	Names 1 color
	18	Matches 2 colors
	19	Counts 3 objects
	20	Points to small square
	22	Points to long object (changed)
	35	Points to penny, nickel, dime
	41	Points to 4 colors
	43	Counts by rote to 15
	47	Name 3 coins
	55	Points to 8 colors
	57	Points to $1 bill
	59	Tells number of pennies in a nickel
	62	Verbalizes understanding of morning vs. afternoon
	66	Points to $5 bill
	68	Counts 13 objects
	78	Builds 3 steps with cubes (from model of 4 steps)
	80	Names and tells use of bank check
	83	Tells number of pennies in a dime
Language		
	1	Jabbers expressively
	3	Points to 1 body part
	16	Names preferred object
	24	Talks on telephone
	37	Requests 1 items from store clerk
	49	Uses irregular plurals
	50	Answers telephone and gets person requested by caller
	52	Names 8 animals

Domain	Item	Description
Self Help	6	Replaces cup after drinking
	11	Hangs clothing on hook
	19	Removes pull-down garment
	22	Removes pull-over garment
	24	Snaps front snaps
	35	Serves food to self
	36	Prepares bowl of dry cereal
	46	Wipes self after toileting
	51	Uses napkin
	52	Puts on pull-over garment
	55	Prepares sandwich
Personal/Social		
	8	Sits in circle and joins group in imitating leader
	17	Points to self in group photograph
	24	Says "thank-you" for service or compliment
	25	Says "please" with requests
	29	Tells street name and address
	31	Says "excuse me" when interrupting or disturbing others
	33	Plays competitive exercise games

LAP-3 Assessment Materials

The *LAP-3* assessment includes five types of materials: the *LAP-3 Assessment Manual*, the *LAP-3 Scoring Booklet*, the *LAP-3 Assessment Kit*, comprised of manipulatives and disposables needed to administer most assessment items, the *LAP-3 Computer Scoring Assistant* (PC, Web-based, and PDA software), and the *LAP-3 Learning Activity Cards*. Each of these materials is described below.

***LAP-3* Assessment Manual.** The *LAP-3 Assessment Manual* forms the core of the assessment. The contents of the *LAP-3 Assessment Manual* are arranged as follows:

- Front contents—Includes rules for starting point, basal, ceiling, and other administration procedures
- Center contents—Includes individual items arranged in chronological order in seven developmental domains. A list of all items and materials is located at the beginning of each domain followed by the individual behaviors to be assessed. Each item includes administration procedures, materials, and scoring criteria, as well as columns for recording results and observational comments.
- Back contents—Includes summary pages, an Individual Planning Form, and a developmental profile for charting individual assessment.

The *LAP-3 Assessment Manual* contains a hierarchy of 383 developmental skills arranged in chronological sequence in seven domains of development including:

Gross Motor	54 items
Fine Motor	40 items
Pre-Writing	38 items
Cognitive	87 items
Language	69 items
Self-Help	50 items
Personal/Social	45 items

A sequential list of assessment items by developmental age range is located at the beginning of each domain followed by a list of the materials needed to administer the domain. The assessment begins on the page immediately following the materials list. The developmental domain (e.g., gross motor) is indicated at the top of each page. The organization of the *LAP-3 Assessment Manual* pages is illustrated in Figure 1.

Figure 1. Organization of *LAP-3 Assessment Manual* Page

	BEHAVIOR	MATERIALS AND PROCEDURES	CRITERIA	ONGOING ASSESSMENT Beg Year +/-	Mid Year +/-	End Year +/-	COMMENTS
36-41 MONTHS	10. Makes flat, round "cake" out of clay	*Materials:* Soft clay or play dough *Procedure:* Say, **"Watch me."** Demonstrate making flat, round "cake" by pressing and patting clay on table. Give child soft clay or play dough, and say, **"You do it."**	Credit if child makes flat, round "cake" out of clay. Allow 2 demonstrations and 2 trials.				
	11. Puts 6 pegs in pegboard	*Materials:* Pegboard with 6 round holes (3/8" in diameter); 6 round pegs (2-1/2" long) *Procedure:* In view of child, remove pegs from board and place in row on table. Say, **"Put them back in their holes."** Point to pegs and then board.	Credit if child puts 6 pegs in pegboard in 20 seconds or less. Allow 3 trials.				
	12. Weaves string randomly through holes in sewing board	*Materials:* Rubber sewing board (6 holes); Lace (End of string should be tied to the board) *Procedure:* Say, **"Watch me."** Using the sewing board and wooden tip/needle, weave string through three holes. Say, **"Now you do it."** Give the child the sewing board and string weaved through 3 holes. Repeat procedure a second time if necessary.	Credit if child weaves string through 3 holes in any order within 2 trials.				
	13. Closes fist and wiggles thumb, right and left	*Materials:* None *Procedure:* Place hand in front of child resting elbow on table and say, **"Watch me."** Close hand into a fist, hold thumb up and wiggle it. Say, **"You do it."** Repeat procedure with other hand.	Credit if child wiggles each thumb while holding fingers still and keeping hand closed. Allow 2 trials with each hand.				

Each page of the *LAP-3 Assessment Manual* contains the following information:

Developmental Age The <u>approximate</u> developmental age range is indicated left of the first item for each age range.

Behavior Each item is numbered and described.

Materials/ Procedures The materials and procedures column has two parts. All materials needed to administer the item are listed above the procedures. Most of these materials are in the *LAP-3* kit. The procedures for administering each item are located below the list of materials. Spoken words or phases are in **bold** and should be followed as closely as possible. Following the procedures as described will help ensure the reliability of the assessment results.

Criteria The criteria column provides information for determining whether responses should be credited. These criteria should be used in determining whether or not the child has successfully completed the task.

Score A score indicating the child's success or failure of the item should be recorded in this column. A plus (+) indicates the behavior was observed. A minus (-) indicates the behavior was not observed (the

item criteria was not met). Three subheadings are located in the ongoing assessment column to record a child's skill development progress on each item. The first subheading "Beg Year" should be used to record the date of the initial assessment. The second and third subheadings "Mid Year" and "End Year" may be used to record the date when the child successfully completes an item missed previously. You may also want to add a plus in the score column.

Comments   A space is provided for specific comments regarding the particular item. Explanations of any modification of procedures, questions about the appropriateness of an item for a specific child, or use of adaptive equipment/materials should be explained in this column. This information is critical for examination of individual strengths and needs.

Additional tools are located in the back of the *LAP-3 Assessment Manual* to assist the examiner in using the *LAP-3* and summarizing assessment results. These tools include: a bibliography of citations of the *LAP-3* sources, forms to indicate observational notes from the assessment, an Individual Planning form, and a developmental profile form.

LAP-3 Scoring Booklet. The scoring booklet contains an abbreviated form of general administration procedures, a list of each item name in the same sequential order as the assessment manual, space for indicating assessment results, a comment column, and a developmental profile. ***The LAP-3 Scoring Booklet is NOT an assessment instrument. It <u>must</u> be used in conjunction with the LAP-3 assessment manual, which contains the procedures, materials needed, and scoring criteria for each item.***

LAP-3 Assessment Kit. A complete list of materials is located at the beginning of each developmental domain in the *LAP-3 Assessment Manual*. The *LAP-3 Assessment Kit* includes most materials necessary to administer the assessment. It should be noted that results might vary if the standard kit is not used. To obtain the most reliable and valid results, we strongly recommend using the *LAP-3 Assessment Kit*.

LAP-3 Software. The LAP-3 software assists early childhood professionals in analyzing data for both individuals and groups of children. The LAP-3 software generates:
- Individual assessment results and summaries
- Classroom profiles
- Parent reports
- Group progress charts
- Links to developmentally appropriate activities
- Individual, classroom, and center analyses of assessment results in relation to the Head Start Child Outcomes.

LAP-3 software is available in both web and CD-ROM formats. LAP-3 software is also available for Personal Digital Assistants (PDA) to assist teachers in the collection and

recording of assessment data on children. After collecting the data on your PDA simply hot sync your PDA to a local computer or a computer hooked to the web to transfer the latest assessment information to your database for review and report generation.

***LAP-3 Learning Activity Cards*.** The *LAP-3 Learning Activity Cards* are a set of 383 sequential cards correlated with each item in the seven domains of the *LAP-3*. Each card presents one or more activities focused on enhancing the acquisition of a specific developmental skill from the *LAP-3*.

Chapter 3
Test Administration Guidelines

The first section of this chapter provides information about factors to consider when administering the *LAP-3*. Additional sections provide detailed guidance for computing the child's chronological age in months, scoring procedures, and guidelines for completing the developmental profile.

Test Administration Considerations

A variety of issues should be considered to help ensure that the overall results reflect an accurate picture of a child's level of functioning for each developmental domain. The *LAP-3* can be used for ongoing observation in the natural setting or, more formally, by an examiner (classroom teacher or other examiner) who administers the *LAP-3* to individual children at a specific checkpoint (e.g., beginning-, middle-, and end-of-year). The following guidelines mainly apply to the formal administration of the *LAP-3*.

Administration Time

The length of time for administering the *LAP-3* depends on a variety of factors such as the experience of the examiner, the age of the child, the child's behavior and/or attention span, the environment, and the method of assessment. Generally, an experienced examiner can complete all seven domains in about 1½ hours. However, seldom can all domains be administered to a child in a single session due to the limited attention span of very young children. Most assessment sessions should be limited to thirty minutes. The child should be provided a break, change of activities, and/or extended time interval between sessions. Because maximum performance of the child is sought, the examiner should be careful to end a session if the child becomes inattentive or severely distracted. However, the examiner should attempt to complete the domain being administered before ending the session.

Physical Setting

For formal administrations, the environment for assessment should be a quiet, well-lit room free of distractions. Toys or other objects should be out of the child's reach. If it is necessary to conduct the assessment in a room where other activities are in progress, a screen could be placed between the child and the other children in an effort to minimize distractions. Because some gross motor items require the child to hop, jump, walk, or throw a ball, the examiner should make sure there is adequate room to perform these activities. Also, some items in the gross motor domain require access to large items such as a stairway or tricycle.

Arrangement of Materials

The assessment kit should be placed out of view of the child to minimize distractions. The examiner should check the materials prior to the assessment to see that all materials are in

place, including consumable paper supplies. When the assessment is complete, the examiner should be careful to return materials to the *LAP-3 Assessment Kit*.

Establishing and Maintaining Rapport

First and foremost, time should be taken to establish a comfortable rapport with the child. Make sure the assessment is being administered at the best time of day for the child, when he or she is likely to be most alert. Encouraging the child to play with the toy cars or other materials may be necessary to establish rapport and help the child to relax. Remember, eye contact while giving instructions helps maintain the child's attention.

The examiner should attempt to establish a relaxed but active pace. An assessment session can be ruined by slowing it down so much that you lose a child's attention or by rushing too quickly through activities so that you do not give a child enough time to demonstrate his or her abilities. Adequate preparation is a key to maintaining interest and attention. Fumbling with materials, reading instructions to yourself, and searching for items are certain ways to lose the interest of the child. The examiner must always maintain control of assessment activities. If you should find you are losing a child's attention, speed up the pace slightly.

In cases where the child is getting tired or showing little attention, it is best to complete the current domain and continue the assessment at a later time. Take caution not to show frustration or displeasure toward the child but indicate that the assessment will be continued later (e.g., the afternoon, the next day). *Obvious inattentiveness or distraction of the child should be noted in the comment column of the LAP-3 Assessment Manual or Scoring Booklet.*

Avoiding Cues

The examiner should be careful not to give cues to the child. Avoid the use of phrases such as, *"That's right,"* or *"Now here's a hard (or easy) one,"* or similar phrases. Avoid body language such as nods, frowns, or smiles at the time a child achieves (or fails) a task, which can give undesired feedback. Phrases such as, *"You're working hard!"* or *"Can you think of anything else?"* give encouragement, but avoid inappropriate cues. Examiners must be especially careful to avoid teaching items inadvertently.

Following Procedures

The reliability of assessment with the *LAP-3* is dependent upon the examiner following the explicit instructions in the *LAP-3 Assessment Manual*. The examiner should read all item procedures and criteria prior to administration of an item. The examiner should be careful to say the verbal instructions *exactly* as written in the manual. Verbal instructions to the child are always preceded by *"Say"* with the specific verbal instructions in quotations and bold type. The examiner should say the verbal instructions clearly with sufficient enthusiasm, maintain eye contact with the child, and avoid monotonous reading of instructions to young children.

Computing Chronological Age

The child's chronological age must be calculated to determine the appropriate starting point in each domain. Before beginning the assessment, the chronological age should be converted into months using the following rules.

Computation Process

1. Using the left side of the cover page of the Scoring Booklet (called Beginning Year), write the date of assessment and date of birth in standard form as indicated.

2. Use the space to the right of this area to convert dates for computation. To convert both the date of assessment and date of birth, re-enter the same information in the following sequence: year, month, day. For example, the date 12/25/2003 is rewritten 2003/12/25.

3. To calculate the chronological age in months, subtract the date of birth from the date of assessment, beginning on the right with the "day" column. Then move to the middle column, "months," and then the column on the left, "years."

4. If the calculation is not possible without "borrowing," ALWAYS borrow these amounts:
   --When borrowing a month, borrow 30 days
   --When borrowing a year, borrow 12 months

5. Then complete the calculation by multiplying the number of years by 12 (to convert to months) and adding the number of months from the month and day rows. Add one additional month to the total, <u>if the days are 15 or more</u>. For an example, see Figure 2.

Figure 2. Calculating Chronological Age

```
                        Standard Dates      Converted Dates
                                                   6   44
    Date of Assessment:   7 / 14 / 2003      2003 / 7̶ / 1̶4̶
    Date of Birth:        4 / 16 / 1999      1999 / 4 / 16
                                               4 / 2 / 28


     Year:   4   years  x 12  =    + 48  months
     Month: enter months    =    +  2  months
     *(Day: Add 1 month     =    +  1   month
     if days are 15 or more)


   CHRONOLOGICAL AGE    51   months
```

Determining Starting Points

Once the chronological age for a child has been converted into months, the starting point for each domain should be determined. The starting point is the first item in the same developmental age range as the child's chronological age. If there are no items for that age, the first item in the developmental age range prior to the child's chronological age should be used as the starting point.

Determining Starting Points for Children with Disabilities

In the case of children with disabilities, the reports of screening and/or professional diagnostic results are used to provide specific information regarding the individual child's developmental level of functioning. This information should form the basis for determining the appropriate point for beginning the assessment process. If this information is not available, begin administering the assessment at half of the child's chronological age, which would probably allow for the establishment of a basal.

Scoring Procedures

If the child meets the criteria of an item, a plus (+) should be recorded to indicate the presence of the criterion-referenced behavior. A minus (-) is recorded if the skill is not demonstrated by the child. Examiners must adhere to the following rules to establish an appropriate basal and ceiling. Table 4 depicts the basal and ceiling criteria.

Table 4.   Basal and Ceiling Criteria for *LAP-3*

Basal	8 consecutive items successfully completed
Ceiling	3 errors out of 5 consecutive items

Basal Rules

1. Because it is important that the child establish a basal (or initial level of successful functioning), the demonstration of **eight** consecutive correct items has been designated as the basal for the *LAP-3*.

2. If the child fails to demonstrate a specific skill, the assessor should work backwards in increments of eight (or the appropriate increment needed) until the basal of eight consecutive items is established.

3. If a basal cannot be established because the child is functioning below the first item, use the <u>first item</u> in that domain as the basal.

Figure 3 provides an example of establishing a basal on the *LAP-3*.

Figure 3. Determining the Basal

Language		ONGOING ASSESSMENT			Comments
		Beg Year +/-	Mid Year +/-	End Year +/-	
42-47 months	27. Responds to *how* and *where* questions	+			
	28. Answers *if-what* questions	+			
	29. Shows front of book	+			
48-53 months	30. Pantomimes definitions of words	+			
	31. Discriminates letters	+	**Basal**		
	32. Discriminates *is* and *is not* by pointing to objects	+			
	33. Points to where reader begins in book	+			
	34. Demonstrates understanding of 4 prepositions by placing cube	+			
	35. Tells name of 2 printed letters	--			
	36. Uses prepositions	+			
	37. Selects 4 (out of 5) pictures related to a sentence read aloud	--			

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Ceiling Rules

1. After the basal has been determined, the assessment should continue until the child accumulates **three minuses in a five-item sequence**. This defines the child's ceiling level of performance. The assessment should end at this point.

2. If the child has established a basal and successfully completes all items in a domain without accumulating three minuses out of five consecutive items, use the last item of that domain as the ceiling cut off.

Figure 4 provides an example of a ceiling on the *LAP-3*.

Figure 4. Determining the Ceiling

Language		ONGOING ASSESSMENT			Comments
		Beg Year +/-	Mid Year +/-	End Year +/-	
	34. Demonstrates understanding of 4 prepositions by placing cube	+			
	35. Tells name of 2 printed letters	--			
	36. Uses prepositions	+			
	37. Selects 4 (out of 5) pictures related to a sentence read aloud	--	Ceiling		
	38. Tells use of objects	--			
	39. Answers 3 questions regarding physical needs				

Additional Scoring Rules

1. **Refusals.** If the examiner administers an item and the child refuses to attempt it, the score should be recorded as a minus (-) with the word "refused" written in the comment column.

2. **Inaccessible materials.** If the examiner cannot administer an item because the material is not available (e.g., a stairway) or some other extenuating circumstance, this should be noted in the comment column. However, it is important to recognize that such missing information compromises the ability of the assessment to provide an accurate overall picture of the child's skills and should be acknowledged in subsequent uses of the assessment information for individual planning.

3. **Spontaneous corrections.** If a child changes a response any time during the administration of an item without adult assistance, the item should be scored based on the last response the child gives.

Computing Raw Scores

The raw score represents the number of items successfully completed in a given domain up to the ceiling, including all the items prior to the basal. All items prior to the basal are counted as correct and all items beyond the ceiling are ignored. In any use of the information generated by the *LAP-3* assessment, it is important to be aware that the developmental age assigned to a specific item often varies among reputable research-based sources. Therefore, while the *LAP-3* data reflect documented norms, it is essential that the developmental ages be viewed as <u>approximate</u> in nature. Raw scores for an individual child across assessment periods may be used to observe whether or not the child is acquiring new skills as would be expected over time.

Compute the raw score for a domain using the following rules:

1. Write the item number (NOT the developmental age) of the last item of the ceiling (i.e., third minus out of five consecutive items) at the bottom of the domain in the row labeled "Number of last item of the ceiling."

2. Count the number of minuses between the basal and ceiling and enter this number at the bottom of the domain in the row labeled "Subtract (minuses between basal/ceiling)."

3. Subtract the number of minuses in the domain (second line) from the last ceiling item number (in the first line) and enter the result on the line labeled "Raw Score." This is the child's raw score for that domain.

Figure 5 provides an example of how to determine the basal, ceiling, and raw score.

Figure 5. Computing Raw Scores

Language		ONGOING ASSESSMENT			Comments
		Beg Year +/-	**Mid Year** +/-	**End Year** +/-	
60-65 months	40. Jumps over yardstick	+			
	41. Runs 35-yard dash	+			
	42. Running broad jumps	+			
	43. Swings each leg separately back and forth	+			
	44. Hops forward on each foot separately	+	Basal		
66-71 months	45. Skips on alternate feet	+			
	46. Stands on each foot alternately with eyes closed	+			
	47. Walks backward heel-to-toe	+			
72+ months	48. Jumps and turns	--			
	49. Bounces ball with 1 hand and catches with 2 hands	+			
	50. Pulls up and holds chin above overhead bar	--	Ceiling		
	51. Catches ball with 1 hand	--			
	52. Throws small ball at target				
	53. Standing broad jumps, 38"				
	54. Jumps rope				
	Number of last item of the ceiling	51			
	Subtract (minuses between basal/ceiling)	3			
	Raw Score	48			

LAP-3 Profile

For a visual representation of the child's developmental profile, use the bar graph on the back of the assessment manual or scoring booklet. After the initial assessment, color the appropriate spaces corresponding to the behaviors that the child achieved (all pluses) in the row labeled **BEG**. The spaces corresponding to the behaviors not yet achieved should be left blank. As the child demonstrates accomplishment of a specific behavior, use a contrasting color to indicate acquisition of the skill item in the appropriate space in either the **MID** and/or **END** rows, as appropriate. Figure 7 depicts an example of the method for using the *LAP-3* Profile.

Figure 6. Completing the *LAP-3* Profile

		Birth		36		48		60		72	
Gross Motor	**Beg**										
	Mid										
	End										
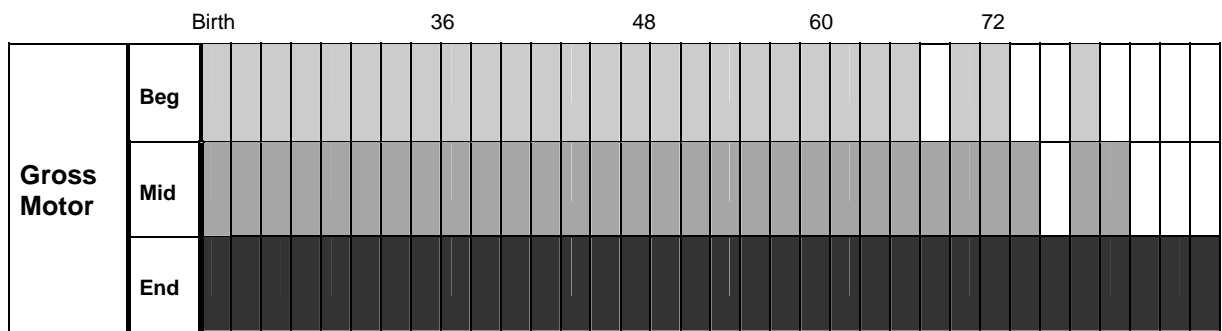
It is the responsibility of the child's caregivers and/or teachers to analyze each item to ascertain its appropriateness for individual children. An item's relevance is determined by the child's environment, current developmental skill level, and implications for future skill development.

Using the Scoring Booklets

LAP-3 **scoring booklets MUST be used in conjunction with the** *LAP-3* **Assessment Manual since the procedures, materials, and assessment criteria are located only in the manual.** The rules described above also apply to the scoring booklet (e.g., calculating the chronological age, determining the starting point in each domain, establishing a basal and ceiling, and calculating a raw score). It also has an *LAP-3* profile on the back of the booklet, which should be used in the same manner as the profile on the manual.

Chapter 4
The *LAP-3* Reliability and Validity Study:
Methodology and Procedures

Project Description

To date there is little written information about the reliability and validity of the *LAP*, even though it has been used across the United States since the early 1970s (Bagnato, Neisworth & Munson, 1997). The purpose of this research was to examine and document the reliability and validity of the *LAP-3*. Three types of studies were conducted:

- Test-Retest Reliability-the extent to which scores on the *LAP-3* are consistent from one period of time to the next. The *LAP-3* was administered and then re-administered to the same child on two different occasions by the same examiner one to three weeks apart.

- Interrater Reliability-the extent to which different examiners achieve the same results when independently assessing the same child using the *LAP-3*. The *LAP-3* was administered and then re-administered to the same child by two different examiners one to three weeks apart.

- Criterion Validity-the extent to which individual scores on the *LAP-3* correspond with scores on a similar test. Both the *LAP-3* and the Battelle Developmental Inventory (BDI) were administered to the same child in the same or consecutive sessions.

In addition, these data were used to calculate other statistical properties of the *LAP-3*, including correlations between raw scores and chronological age, internal consistency of domains, and standard errors of measurement. Descriptions of the sample and data collection procedures are described below.

Methods

To investigate the reliability and validity of the *LAP-3*, a sample representative of the United States was selected based on population projections for the Year 2000 by the U.S. Census Bureau (1995). The project sample included 363 children ages 30 to 78 months old, sampled in two phases. The first phase included 251 children with typical from 36 to 72 months old (referred to as the core sample), 10 children with typical development from 30 to 35 months old, 11 children with typical development from 73 to 78 months old, and 28 children with professionally diagnosed disabilities from 33 to 73 months old. The second phase consisted of 63 children with typical development from 36 to 72 months old. The sample of younger and older children was included in Phase 1 to verify the lower and upper age limits of the measure. The sample of atypically developing children was included to examine whether the *LAP-3* could be used appropriately with children with disabilities. A stratified sampling

procedure was used based on geographic region, age, race, gender, and type of setting as described below.

Geographic Distribution of Project Sites

Four sites were selected to represent the geographic regions of the United States: Northeast (Boston, Massachusetts), South (Orange County, North Carolina), Midwest (Denver, Colorado), and Northwest (Seattle, Washington). The site in the South contained slightly less than half of the sample (47.4%) and the Central site approximately another third of the sample (30.3%). The remaining proportion of the sample was equally distributed between the Northeast site (11.6%) and the Northwestern site (10.7%). Table 5 depicts the distribution of the sample across the four sites.

Table 5. Geographic Distribution of Project Sample (N=363)

Geographic Area	Number of Children	Percentage of Sample
Northeast	42	11.6%
South	172	47.4%
Central	110	30.3%
Northwest	39	10.7%
Total	363	100%

Participant Characteristics

Age and Gender. Children were recruited from the following eight age categories: 30-35 months, 36-41 months, 42-47 months, 48-53 months, 54-59 months, 60-65 months, 66-72, and 73-78 months. Table 6 shows the distribution of the Project Sample by age and gender.

Table 6. Number (Percent) of Participants by Age and Gender (N=363)

Age Category	Mean Age (SD)	Females (%)	Males (%)	Total (%)
30-35 months	33.7 (1.3)	9 (81.8%)	1 (18.2%)	11 (3.0%)
36-41 months	38.6 (1.7)	16 (44.4%)	20 (55.6%)	36 (9.9%)
42-47 months	44.5 (1.6)	31 (59.6%)	21 (40.4%)	52 (14.3%)
48-53 months	50.6 (1.5)	36 (46.8%)	41 (53.2%)	77 (21.2%)
54-59 months	56.5 (1.7)	37 (50.0%)	37 (50.0%)	73 (20.1%)
60-65 months	62.5 (1.8)	26 (52.0%)	24 (48.0%)	50 (13.8%)
66-72 months	68.7 (2.1)	26 (51.0%)	25 (49.0%)	52 (14.3%)
73-78 months	74.8 (1.8)	6 (50.0%)	6 (50.0%)	12 (3.3%)
Total	54.3 (10.6)	187 (51.5%)	176 (48.5%)	363 (100%)

Race/Ethnicity. To represent the variety of cultural and ethnic groups in the United States, children were proportionally selected for the sample to reflect the major racial/ethnic groups indicated in the U.S. Census Bureau population projections for the Year 2000 (1995) as the Census 2000 data were not yet available. These groups included the following categories: African American; American Indian, Eskimo, and Aleut; Asian and Pacific Islander; Hispanic origin; and White. In addition, an Other category included mostly bi-racial children who were categorized in this group by their parents. Table 7 depicts the racial/ethnic distribution by geographic region.

Table 7. Number of Participants by Race/Ethnicity and Geographic Region (N=363)

Racial/Ethnic Group	Central	Northeast	South	Northwest	Total[2]
African American	2	16	49	2	69 (19.0%)
American Indian, Eskimo, and Aleut	0	2	4	2	8 (2.2%)
Asian and Pacific Islander	2	1	9	8	20 (5.5%)
Hispanic origin	8	4	10	1	23 (6.3%)
White	85	11	93	22	211 (58.2%)
Other[1]	13	8	7	4	32 (8.8%)
Total	110	42	172	39	363 (100%)

[1] Children classified as "Other" were multi-racial according to the following distribution: Hispanic/White =12; African American/White=6; and other multi-racial groups=14.

[2] The 1995 US Census Bureau population projections for the year 2000 were: African American=13%; American Indian, Eskimo, and Aleut=1%; Asian and Pacific Islander=4%; Hispanic origin=11%; and White=71%.

Family Characteristics

Parents were asked questions about family characteristics, including family composition, parental educational levels, income level, and home languages. The majority of the children lived with both of their parents (68.9%) and another 18.2% lived with their mothers. Most children (52.9%) lived with one sibling, although 26.4% had no siblings. The remaining children had three or more siblings (20.7%). English was reported as the primary language for the majority of parents (93.7%) and children (94.8%). Approximately 10% of the parents and children spoke a second language, typically Spanish or an Asian language.

Of the 344 families who reported annual income, the distribution included: Below $10,000 (9.9%), $10,000-$20,000 (11.3%), $20,000-$30,000 (5.5%), and $30,000-$40,000 (9.1%); above $40,000 (59.0%) as reported by the parents. Thus, more than half of the families had an income of $40,000 or higher.

Parents were asked to indicate their highest education level completed, as shown in Table 8. The average education level of this sample was slightly higher than the US population in

general, based on figures from the 2000 US Census. For example, 90.5% of the mothers and 81.4% of the fathers in the sample had a high school degree or higher, compared to census figures of 85.9% and 81.9% for females and males 25 to 34 years old and 86.6% and 83.4% for females and males 35 to 44 year olds.

Table 8. Highest Grade Completed of Mothers and Fathers (N=363)

Highest Grade	Mother (percent)	Father (percent)
Less than high school	14 (3.9%)	14 (3.9%)
High school	88 (24.2%)	85 (23.4%)
Some college	40 (11.0%)	24 (6.6%)
Associate's degree	8 (2.2%)	7 (1.9%)
Bachelors degree	99 (27.3%)	88 (24.2%)
Masters degree	59 (16.2%)	45 (12.4%)
Doctoral degree	35 (9.6%)	47 (12.9%)
No report	20 (5.5%)	53 (14.6%)
Total	363 (100%)	363 (100%)

Program Types

Children were recruited from a variety of different settings, including center-based programs, family day care programs, Head Start, and public school settings outside the home and individual homes. For the purposes of data analysis, the types of settings were collapsed into five distinct groups: center-based programs (N=218, 60.1%), including developmental day cares, day care centers, and preschools; Head Start programs (N=86, 23.7%); public school kindergartens (N= 40, 11.0%); family daycare programs (N=7, 1.9%); and individual homes (N=12, 3.3%). A total of 29 programs/schools participated in the study, with some variation in the types of centers across the four geographic regions. The Northeast site (Boston, MA) included a Head Start program, three center-based facilities, and one public school system. In the South (Orange County, North Carolina), participating programs included seven community child care centers, both an Early Head Start and preschool Head Start, a developmental day center (centers serving only children with disabilities), and a local public school system participated in the study. The participants in the Central site (Boulder/Denver, Colorado) included five center-based programs, two family day care programs, and two Head Start programs. The Northwestern site was (Seattle, Washington) composed of four center-based programs, including a university experimental school and a Montessori school.

Measures

Learning Accomplishment Profile-Third Edition (LAP-3)

The LAP-3 (Sanford, Zelman, Hardin, & Peisner-Feinberg, 2003) is a criterion-referenced measure designed for children 36-72 months of age. The LAP-3 assesses skills in seven developmental domains: gross motor, fine motor, pre-writing, cognitive, language, self-help, and personal/social. A hierarchy of developmental skills in each domain is arranged

according to chronological age categories. Each item contains specific material recommendations, procedures for administration, and scoring criteria.

Battelle Developmental Inventory (BDI)

The Battelle Developmental Inventory (Newborg, Stock, Wnek, Guidubaldi, & Svinicki, 1984) was used as the criterion validity instrument for the study. The BDI is an individually administered and norm-referenced instrument that assesses the developmental functioning of children birth to eight years old. The BDI consists of 341 test items grouped into five developmental domains: Personal-Social, Adaptive, Motor (Gross Motor and Fine Motor), Communication, and Cognitive. The BDI is a well-known and widely used measure with good reliability and validity characteristics. For example, based on the test development sample, the Battelle demonstrated good test-retest reliability (r= .90 to .99 across domains by six-month age groups). Good internal construction of the BDI is demonstrated by moderate to high intercorrelations across subdomains ($r > .70$ with few exceptions).

Parent Questionnaire

A parent questionnaire was distributed with the permission letters. The parent questionnaire contained basic demographic information required for participation in the study (e.g., child birth date, gender, ethnicity), other child background information (e.g., primary language, family income, parents' education), and 10 items on the *LAP-3* that data collectors could not observe or caregivers might not be able to report (e.g., bathing practices).

Procedures

A team of nine professionals trained and supervised by the project co-directors collected the data. Each examiner had a college degree in education, developmental psychology, or another related field. The examiners participated in a two-and-a-half day training session on the data collection procedures and administration procedures for the *LAP-3* and *BDI* in the fall of 2001.

Each program administrator (center director or principal), teacher, or parent in the case of home settings, was contacted in person or by phone and invited to participate in the study. Copies of the *LAP-R* manual and letters describing the study and requesting consent to participate were shared and discussed during a subsequent meeting. In the case of child care, Head Start, and public school programs, program administrators or teachers were asked to distribute and collect permission forms for parents interested in participating in the study. After the children were recruited, each examiner was responsible for scheduling assessment visits with the appropriate individual, completing the assessments, and submitting completed protocols to the project co-directors.

When the data collection was completed, the individual item scores were entered into a database. Once all data had been entered, two different individuals verified each item against the original protocol independently, and all errors were reconciled and corrected in the database. An analysis data set based on the final database was programmed in Pearl and then converted into SPSS 11.5. Statistical analyses were generated in SPSS 11.5 for each component of the study.

Of the 251children in the Core Sample, 230 or 91.6% were administered both the *LAP-3* and the *BDI*. These assessments were administered during the same testing session or in two sessions in close proximity.

A second *LAP-3* was given to 73 children for the test-retest (N=40) or interrater reliability (N=33) studies. The children participating in these two studies reflected a similar distribution in geographic region, age, gender, and race/ethnicity to the overall sample. Because the *LAP-3* measures a continuum of developmental skills, the test-retest and interrater reliability were measured over a short period of time so that any differences between administrations were more likely to reflect reliability rather than individual development. For the test-retest reliability study, the same examiner administered the *LAP-3* on two separate occasions one to three weeks apart. For the interrater reliability study, two different examiners administered the *LAP-3* on two separate occasions one to three weeks apart.

Chapter 5
Statistical Properties of *LAP-3*

In this chapter, the results of the reliability and validity studies are described. Every effort was made to gather complete data for each child; however, in some cases there were missing items that prevented calculation of a domain score. In most cases, the missing data were caused by the inability to observe particular behaviors due to the unavailability of large materials (e.g., furniture, stairway) or a restricted number of test items in a developmental range. It should also be noted that items on the Self-Help and Personal/Social domains were sometimes scored according to caregiver or parent reports.

Statistical Properties of the Project Sample

The Project Sample (N=363) included children with typical and atypical development from 30-78 months old (Mean = 54.3, SD = 10.6), distributed across the eight age categories as described in Chapter 3. The mean raw scores across domains for the Core Sample (children with typical development from 36-72 months old) ranged from 25.2 to 53.4. As stated earlier, the youngest (30-35 months) and oldest (73-78 months) age groups were included to demonstrate that the *LAP-3* is not appropriate for children younger or older than the 36-72 month old age range (unless they are functioning below their chronological age). Of the 10 children with typical development in the youngest age group (M=33.8, SD=1.40), the mean raw scores ranged from 11.0 to 27.8 for each domain. While most of the children in the youngest group were able to establish a basal, the small number of items in the lower ranges of each domain may provide a less accurate assessment of their functioning. We recommend using a measure designed for younger children, such as the Early Learning Accomplishment Profile (Early LAP), to provide a more appropriate assessment for children functioning below 36 months.

Of the 11 children in the oldest age group with typical development (M=75.8, SD=2.04), the mean raw scores for each domain ranged from 36.3 to 87.2, with 100% of the children completing the assessment before reaching a ceiling in five domains and an average of 81.8% unable to establish a ceiling in the remaining two domains, confirming that the LAP-3 is not an appropriate instrument for children with typical development above 72 months of age.

Reliability

The reliability of an assessment instrument refers to its accuracy and consistency over time. For example, an assessment instrument should produce roughly the same results when the same individuals are tested under similar conditions within a short period of time. Analyses of the reliability for each domain of the *LAP-3*, including correlations with age, internal consistency, standard error of measurement, test-retest reliability, and interrater reliability were conducted.

Correlations Between Chronological Age and LAP-3 Raw Scores

The correlations between the *LAP-3* raw scores and chronological ages were computed for the Core Sample (children with typical development in the 36-72 month age range) using Pearson product-moment correlation coefficients (*r*). Table 9 presents the means, standard deviations, and correlation coefficients by domain for the Core Sample. These results indicate strong correlations (.77 to .84) between chronological age and the raw scores for six of the seven domains and moderate correlations (.61) for the Personal/Social domain. These results suggest that the raw scores on the *LAP-3* are reliably associated with chronological age, so that older children are likely to obtain higher scores than younger children. It should be noted that the number of items in each domain varies, and therefore the means and ranges will vary accordingly (see page 20).

Table 9. Means, Standard Deviations, and Domain/Chronological Age Correlations of *LAP-3* Raw Scores for Core Sample (N=251)

DOMAINS	Means	SD	*r*
Gross Motor	38.90	12.47	.84
Fine Motor	31.29	9.17	.82
Pre-Writing	25.25	9.20	.82
Cognitive	53.41	24.08	.82
Language	44.96	15.17	.77
Self-Help	44.50	10.94	.78
Personal/Social	36.64	8.38	.61

Note: For all correlations, $p < .01$
    N: GM=245, FM=241, PW=243, C=246, L=242, SH=243, PS=229

Internal Consistency

The internal consistency of the *LAP-3* was examined to determine how well the items within each domain relate to one another. The internal consistency coefficient indicates how effectively the individual domain scores on the *LAP-3* are measuring defined constructs (e.g., gross motor, fine motor, cognitive skills). The higher the value, the greater was the consistency of items within the domain. Cronbach's coefficient alpha was used to calculate the internal consistency of each domain for the total Core Sample (N=251) by age groups. All items before the basal were counted as correct and all items above the ceiling were counted as incorrect for calculating the internal consistency coefficients.

Table 10 presents the results of the internal consistency analyses. The alpha coefficients for the total Core Sample (.96 to .99) indicate strong internal consistency for each domain. The alpha coefficients for the individual age groups are also quite high (.78 to .98). These results indicate that the *LAP-3* items show strong internal consistency within each domain across the various age groups covered by this measure.

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Table 10. Internal Consistency of *LAP-3* Raw Scores by Age Group (N=251)

DOMAINS	36-41[a] months	42-47[b] months	48-53[c] months	54-59[d] months	60-65[e] months	66-72[f] months	Total[g]
Gross Motor	.92	.90	.94	.89	.94	.89	.97
Fine Motor	.89	.90	.92	.91	.91	.92	.96
Pre-Writing	.90	.92	.91	.92	.91	.89	.96
Cognitive	.94	.97	.98	.97	.97	.95	.99
Language	.91	.95	.95	.91	.95	.97	.97
Self-Help	.92	.92	.90	.93	.91	.91	.96
Personal/Social	.95	.93	.93	.78	.95	.85	.96

Note: For all correlations, p < . 01   N: a (GM=15, FM=21, PW=22, C=21, L=21, SH=16, PS=17)
    b (GM=21, FM=35, PW=36, C=35, L=32, SH=31, PS=29)   c (GM=18, FM=32, PW=37, C=36, L=37, SH=29, PS=25
    d (GM=23, FM=23, PW=30, C=31, L=25, SH=19, PS=20)   e (GM=25, FM=24, PW=28, C=28 L=24, SH=21, PS=19)
    f (GM=28, FM=31, PW=35, C=35, L=28, SH=14, PS=30)   g (GM=130, FM=166, PW= 188, C=186, L=167, SH=130, PS=140)

Standard Errors of Measurement

The Standard Error of Measurement (SEM) provides an estimate of the amount of error between an individual's observed score and the true score. The SEM has an inverse relationship with reliability so that as reliability increases the SEM decreases, indicating greater confidence in the accuracy of the observed scores. SEM's were calculated for each domain of the Core Sample (N=251) using the following formula, $SEM = s\sqrt{1 - r}$, where SEM is the standard error of measurement, s is the standard deviation of the observed scores, and *r* is the reliability of the assessment instrument. The internal consistency reliability coefficients reported in the previous section were used to calculate the SEM's. Table 11 presents the SEM's for each domain of the LAP-3 by age group. Because any observed score includes some measurement error, these

Table 11. Standard Errors of Measurement of LAP-3 Raw Scores by Domain and Age Group (N=251)

DOMAINS	36-41[a] months	42-47[b] months	48-53[c] months	54-59[d] months	60-65[e] months	66-72[f] months	Total[d]
Gross Motor	1.76	2.17	2.08	2.27	1.72	1.52	2.16
Fine Motor	1.89	1.70	1.88	1.54	1.25	.91	1.83
Pre-Writing	1.63	1.83	1.73	1.61	1.42	1.19	1.84
Cognitive	2.40	2.61	2.31	3.05	2.30	1.45	2.41
Language	2.12	2.30	2.29	1.57	1.82	2.03	2.63
Self Help	2.68	2.20	1.94	1.55	1.23	3.13	2.19
Personal/Social	1.90	2.12	1.69	1.76	1.41	1.41	1.68

Note: For all correlations, p < . 01   N: a (GM=15, FM=21, PW=22, C=21, L=21, SH=16, PS=17)
    b (GM=21, FM=35, PW=36, C=35, L=32, SH=31, PS=29)   c (GM=18, FM=32, PW=37, C=36, L=37, SH=29, PS=25
    d (GM=23, FM=23, PW=30, C=31, L=25, SH=19, PS=20)   e (GM=25, FM=24, PW=28, C=28 L=24, SH=21, PS=19)
    f (GM=28, FM=31, PW=35, C=35, L=28, SH=14, PS=30)   g (GM=130, FM=166, PW= 188, C=186, L=167, SH=130, PS=140)

SEM's can be used to determine confidence intervals indicating the range within which a child's true score is likely to fall, based on the child's observed score and the SEM. For example, we can be 95% confident that the child's true score will be within the range of scores

indicated by the 95% confidence interval. Confidence intervals can be determined at different levels, based on standard formulas, with larger ranges for wider confidence intervals. The formula for calculating the 95% confidence interval is *observed score $\pm$ 1.96 x SEM*, while the formula for the 99% confidence interval is *observed score $\pm$ 2.58 x SEM*.

Test-Retest Reliability

Test-retest reliability indicates the extent to which scores on an assessment instrument are consistent from one time period to the next. Because the *LAP-3* measures a continuum of developmental skills, the test-retest reliability was measured over a short period of time so that any differences between administrations were more likely to reflect reliability rather than individual development. Therefore, the *LAP-3* was administered by the same examiner on two separate occasions one to three weeks apart for a subset of children from the overall Project Sample (Test-Retest Sample). The Test-Retest Sample was composed of 40 children from 37 to 72 months old (Mean = 57.00, SD = 10.19), including both typically and atypically developing children. The sample consisted of 55% females and 45% males, and was 5% African American, 5% Asian and Pacific Islander, 5% Hispanic origin, 65% White, and 15% "Other" racial/ethnic origins. Test-retest reliability was determined by calculating the correlations between domain scores from the first and the second test administrations using Pearson's *r*. Table 12 presents the means and standard deviations for the first and second test scores and the test-retest correlation coefficients for each domain. The resulting correlations (.96 to .99) demonstrate very good test-retest reliability, indicating a high degree of stability in individual test scores over short intervals of time.

Table 12. Means, Standard Deviations, and Correlations of *LAP-3* Raw Scores by Domain for Test-Retest Reliability Sample (N=40)

DOMAINS	First Testing		Second Testing		
	Mean	**SD**	**Mean**	**SD**	*r*
Gross Motor	41.15	13.40	42.15	12.24	.96
Fine Motor	32.97	9.17	33.22	9.59	.98
Pre-Writing	27.18	9.35	27.65	9.12	.99
Cognitive	55.72	24.35	57.71	23.87	.98
Language	47.58	17.07	50.10	16.83	.96
Self-Help	45.90	10.60	46.28	10.19	.99
Personal/Social	38.11	7.52	37.97	8.33	.97

Note: For all correlations, p < . 01

    N: GM=39, FM=37, PW=40, C=39, L=40, SH =39, PS =38

Interrater Reliability

Interrater reliability measures the extent to which different examiners achieve the same results when independently assessing the same child. The results of the assessment should reflect the developmental skills of the child independent of the particular person administering the test, assuming proper procedures have been followed. In order to determine the level of interrater reliability, the *LAP-3* was administered to a subset of children from the overall Project Sample by two different examiners on two separate occasions one to three weeks apart (Interrater Reliability Sample). The Interrater Reliability Sample was comprised of 33 children from 33 to 73 months old (Mean = 50.33, SD = 11.74), including 51.5% females and 48.5% males, and was 18.2% African American; 9.1% Asian and Pacific Islander, 6.1% Hispanic origin, 60.6% White; and 6.1% "Other" racial/ethnic origins.

Interrater reliability was determined by computing the correlations between the domain scores from the two test administrations by different examiners using Pearson's *r*. Table 13 presents the means and standard deviations for both test administrations and the interrater reliability correlation coefficients for each domain. The resulting correlations indicate a high degree of reliability (.84 to .98) when the *LAP-3* is administered by two different examiners.

Table 13. Means, Standard Deviations, and Correlations of *LAP-3* Raw Scores by Domain for Interrater Reliability Sample (N=33)

DOMAINS	First Testing		Second Testing		
	Mean	**SD**	**Mean**	**SD**	***R***
Gross Motor	35.94	14.81	33.91	14.64	.89
Fine Motor	27.55	11.00	27.55	11.45	.95
Pre-Writing	23.24	10.70	23.06	10.40	.97
Cognitive	46.61	28.57	47.34	28.89	.94
Language	40.41	16.22	42.31	17.65	.93
Self-Help	41.09	12.39	40.92	12.93	.84
Personal/Social	34.89	10.49	35.55	11.78	.98

Note: For all correlations, p < . 01
    N: GM=31, FM=33, PW=33, C=33, L=32, SH=32, SE=28

Validity

The foremost authoritative reference on validity and other test matters, the *1999 Standards for Educational and Psychological Testing*, defines validity as, "The degree to which accumulated evidence and theory support specific interpretations of test scores entailed by proposed uses of a test." (American Educational Research Association, American Psychological Association, and National Council on Measurement in Education, 1999, p.184). This definition emphasizes that inferences derived from test scores give meaning to

them beyond simply reporting numbers. Four types of analyses are recognized by the *1999 Standards for Educational and Psychological Testing* as demonstrating the validity of test score inferences: (1) construct-related evidence; (2) content-related evidence; (3) predictive evidence; and (4) concurrent evidence. Two of these types of validity analyses are presented below: construct validity and criterion validity. Information about the content validity study can be found in Chapter 2.

Construct Validity

Evidence of construct validity can be inferred by examining the intercorrelations among different areas of an assessment instrument. Thus, to examine the extent to which the different domains measure different skills, the intercorrelations among domains were calculated. High correlations among areas would suggest that they are measuring similar underlying constructs, while low correlations would suggest that they are measuring different underlying constructs. Domains that are more strongly related conceptually and that have more items in common would be expected to have relatively stronger intercorrelations. Zero-order correlations using Pearson's *r* were calculated between raw scores for each domain for the Core Sample (N=251), as shown below the diagonal in Table 13. While these high positive correlations (.61 to .89) potentially indicate a single underlying construct, because these zero order correlations were calculated across age groups, they also indicate differences in skill performance as a result of age. To separate these two elements, partial correlations controlling for age were calculated between domain raw scores, as depicted above the diagonal in Table 14. The magnitudes of the partial correlation coefficients are substantially smaller than the zero-order correlations (.26 to .57), in the modest to moderate range. These results suggest that while the different domains of the *LAP-3* are somewhat related, they are also measuring somewhat independent aspects of development.

Table 14. Zero-order Correlations[1] and Partial Correlations[2] Controlling for Age Among *LAP-3* Domains (N=251)

DOMAINS	Gross Motor	Fine Motor	Pre-Writing	Cognitive	Language	Self-Help	Personal/ Social
Gross Motor		.31	.30	.36	.33	.33	.26
Fine Motor	.79		.62	.56	.41	.52	.40
Pre-Writing	.80	.89		.56	.44	.44	.40
Cognitive	.80	.76	.86		.57	.36	.41
Language	.76	.78	.80	.85		.39	.48
Self-Help	.77	.83	.80	.77	.76		.47
Personal/Social	.61	.68	.68	.68	.71	.71	

Note: For all correlations, p < . 01   1=Zero-order Correlations below diagonal.
    N: GM=245, FM=241, PW=243, C=246, L=242, SH=243, PS=229   2=Partial Correlations above diagonal.

Criterion Validity

Criterion validity (also known as concurrent validity) is the extent to which individual scores on one test correspond to scores on an established test of similar constructs. These two tests must be administered consecutively, so as to minimize differences due to development or other variations in test conditions. The established test is the criterion used to validate the new test (Gall, Borg, & Gall, 1996). In this study, the correspondence between the *LAP-3* and the Battelle Developmental Inventory (BDI) was examined to investigate the criterion validity of the *LAP-3*. Of the Core Sample, 230 children (91.6%) were administered both the *LAP-3* and the BDI, either during the same testing session or in two sessions in close proximity. Criterion validity was determined by examining the correlations using Pearson's *r* between the *LAP-3* domain raw scores and the BDI total component raw scores for conceptually related areas. Table 15 presents the correlations between the raw scores for the *LAP-3* domains and the BDI components by age group. The results indicate fairly strong correlations between the *LAP-3* and BDI scores. Seventy-six percent of the domains had correlations between .70 to .92. The remaining 24% had correlations in the .54 to .69 range, and were primarily related to the Communication Domain on the BDI and the Personal/Social Domain on the LAP-3.

Table 15. Correlations Between *LAP-3* Raw Scores and BDI Total Component Raw Scores by Domain (N=230)

LAP-3 Domains	Gross Motor	Fine Motor	Pre-Writing	Cognitive	Language	Self Help	Personal/ Social
BDI Component Totals							
Personal/Social[a]	.68	.70	.70	.72	.76	.78	.88
Adaptive[b]	.73	.71	.71	.72	.76	.79	.70
Gross Motor[c]	.81	.77	.77	.75	.68	.72	.54
Fine Motor[d]	.80	.87	.92	.85	.80	.79	.66
Communication[e]	.64	.66	.69	.78	.82	.69	.68
Cognitive[f]	.76	.82	.84	.91	.86	.77	.68

Note: For all correlations, p < . 01

N: a (GM=191, FM=186, PW=189, C=192, L=190, SH=188, PS=180)   b (GM=180, FM=178, PW=180, C=181, L=178, SH=178, PS=169)
   c (GM=199, FM=193, PW=196, C=200, L=196, SH=196, PS=191)   d (GM=192, FM=189, PW=190, C=193, L=191, SH=190, PS=181)
   e (GM=175, FM=173, PW=174, C=176, L=174, SH=173, PS=167)   f (GM=178, FM=175, PW=177, C=178, L=176, SH=175, PS=167)

Content Validity

Content validity examines the extent to which the scores on an assessment actually represent the content they purport to measure. Content validity is determined through a systematic examination of an assessment instrument by content experts. As discussed earlier, a content or face validity study was conducted on the LAP-3 and adjustments made in accordance with the results of the review. See Chapter 2 for additional details.

Children With Disabilities

Because the *LAP-3* is sometimes used in conjunction with standardized instruments to examine the skill development of children with developmental delays or diagnosed disabilities, a subsample of 28 children with disabilities (9.3%) was selected that reflected the U.S. rates for children under age 18 with disabilities (U.S. Census Bureau, 1995). These children had been professionally diagnosed and were receiving special education services. These children ranged in age from 33 to 73 months old (Mean = 55.21, SD = 11.26), were 39.3% females and 60.7% males, and were 10.7% African American, 14.3% Asian and Pacific Islander, 10.7% Hispanic origin, 53.6% White, and 10.7% "Other" racial/ethnic origins. The distribution of children across geographic areas was 7.1% from the Northeast, 25.0% from the South, 25.0% from the Midwest, and 42.9% from the Northwest. Of the 28 children in the sample, eight children had developmental delays, two children had motor disabilities, and seven children had speech and language disabilities, three children had Autism, one child had ADHD, and seven had multiple disabilities. Where possible, appropriate adaptations in the use of materials and procedures were used to allow children to respond to test items independent of their particular impairment (e.g., use adaptive equipment for child with limited mobility). It is important to note that the information gathered through the *LAP-3* may be beneficial for older children functioning in the 36-72 month age range.

Table 16 depicts the means, standard deviations, and correlations with chronological age (using Pearson's *r*) for each domain for the Atypical Development Sample. As expected, the mean raw scores for each domain are substantially lower than the mean of the children's chronological ages, and the correlations between raw scores and chronological age are substantially lower than the correlations for children with typical development (See Table 9). These results suggest that the *LAP-3* discriminates children's skill levels independently of their age, and that it can be used effectively to assess the developmental skills of children with disabilities.

Table 15. Means, Standard Deviations, and Domain Correlations of *LAP-3* Raw Scores for Atypical Development Sample (N=28)

DOMAINS	Means	SD	*R*
Gross Motor	27.11	12.31	.33
Fine Motor	22.18	10.70	.42*
Pre-Writing	16.18	8.69	.63**
Cognitive	30.30	21.11	.61**
Language	32.54	17.76	.37
Self-Help	33.89	13.34	.54**
Personal/Social	25.52	11.25	.52**

Note: *Correlations significant at, p < . 05
       **Correlations significant at, p < . 01
         N: GM=27, FM=28, PW=27, C=26, L=26, SH=27, SE=27

Concluding Remarks

Overall, this research found the *LAP-3* to be reliable and valid in assessing the development of young children. The *LAP-3* was found to have relatively high correlations between raw domain scores and chronological age for children in the 36-72 month age range, while older children aged out on most domains. The *LAP-3* also evidenced good internal consistency and fairly low standard errors of measurement for each domain. Very good test-retest reliability and interrater reliability were found for all domains of the *LAP-3*. Evidence of adequate construct validity was also shown. The *LAP-3* was found to have very good criterion validity, based on comparisons with the Battelle Developmental Inventory. In sum, the *LAP-3* evidences good reliability and validity characteristics, and is an appropriate tool for use in assessing young children's developmental functioning in the 36-72 month old age range.

References

Allen, K.E., & Schwartz, I.S. (2001). *The Exceptional Child: Inclusion in Early Childhood Education*. New York: Delmar Publishers.

American Educational Research Association, American Psychological Association, and National Council on Measurement in Education. (1999). *1999 Standards for Educational and Psychological Testing*. Washington, DC: American Educational Research Association.

Anastasi, A., & Urbina, S. (1997). *Psychological Testing*. Seventh Edition. Upper Saddle River, NJ: Prentice Hall.

Bagnato, S. J., Neisworth, J. T., & Munson, S. M. (1997). *LINKing assessment and early intervention: An authentic curriculum-based approach*. Baltimore, MD: Paul H. Brookes Publishing Co.

Baroody, A. J. (2000). "Does mathematics instruction for three- to five-year-olds really make sense?" Young Children 55(4): 61-67.

Bredekamp, S. & Copple, C. (Eds.) (1997). *Developmentally Appropriate Practice in Early Childhood Programs*. Washington, DC: National Association for the Education of Young Children.

Gall, M. D., Borg, W. R., Gall, J. P. (1996). *Educational Research*. White Plains, NY: Longman Publishers USA.

Hardin, B.J., Lohr, L. G., Wesley, P. (1996). *Planning* for Success: *A Teacher's Guide to a New Planning Guide to the Preschool Curriculum*. Lewisville, NC: Kaplan Press.

Head Start Bureau. (2000). *ACYF-HS-IM-00-18*. Washington, DC: US Department of Health and Human Services, Administration for Children and Families.

Kowalski, K., K. Pretti-Frontczak, et al. (2001). "Preschool teachers' beliefs concerning the importance of various developmental skills and abilities." Journal of Research in Childhood Education 16(1): 5-14.

Martens, P. A. (1999). "Mommy, how do you write 'Sarah'?": The role of name writing in one child's literacy." Journal of Research in Childhood Education 14(1): 5-15.

Neuman, S.B., Copple, C., & Bredekamp, S. (2000). *Learning to Read and Write: Developmentally Appropriate Practices for Young Children*. Washington, DC: National Association for the Education of Young Children.

Neuman, S.B., & Dickinson, D. K. (2001). Handbook of Early Literacy Research. NY: The Guilford Press.

Newborg, J., Stock, J.R., Wnek, L., Guidubaldi, J., and Svinicki, J. (1984). *Battelle Developmental Inventory*. Chicago, IL: Riverside Publishing Company.

Ross, M. E. (2000). "Science Their Way." <u>Young Children</u> 55(2): 6-13.

Sanford, A.R., Zelman, J.G. (1995). *Learning Accomplishment Profile-Revised Edition (LAP-R)*. Lewisville, NC: Kaplan Press.

Sanford, A.R., Zelman, J.G., Hardin, B.J., & Peisner-Feinberg, E.S. (2003). *Learning Accomplishment Profile-Third Edition (LAP-3)*. Lewisville, NC: Kaplan Press.

U.S. Census Bureau. (1995). *Population Profile of the United States: 1995*. Washington, DC: U.S. Government Printing Office.

Appendix

Participating Programs

Colorado

Bal Swan Children's Center
Bitsy Montessori School
Boulder Day Nursery
Den's Day Care
Janine's Day Care
Martin Park Head Start
Sewall Child Development Center
Tiny Tim
Woodlands Head Start

Massachusetts

Boston Public Schools: Trotter Elementary
Bright Horizons Family Solutions, Inc.
First Path Day Care
Roxbury YMCA
SMOC Head Start

North Carolina

Amity United Methodist Nursery School
Carrboro United Methodist Day Care
Chapel Hill Co-Operative Preschool
Chapel Hill Day Care Center
Children's Learning Center
Community School for People Under Six
Mi Escuelita Spanish Immersion Program
Orange County Early Head Start
Orange County Head Start
Orange County Public Schools
Pasitos
University Day Care/Victory Village

Washington

EEU at University of Washington
Union Bay Children's Center
WCCU
Anonymous community child care center

Original Sources of *LAP*

The full citations for the original sources of the *LAP-R* are listed below. While many of these instruments have been revised, the original date of publication is provided on this list.

Alpern, G., & Boll, T. (1972). *Developmental Profile*. Aspen Colorado: Psychological Development Publications.

Anderson, R. M., M., & Matheny, P. (1963). *Communicative Evaluation Chart From Infancy to Five Years*. Cambridge: Educators Publishing Service.

Bangs, T. E., & Dodson, S. (1979). *Birth to Three Developmental Scale*. New York: Teaching Resources.

Bayley, N. (1969). *Bayley Scales of Infant Development.* New York, NY: The Psychological Corporation.

Caplan, F., ed. (1973). *The First Twelve Months of Life: Your Baby's Growth Month-by-Month*. New York, NY: Grosset and Dunlap.

Cattell, P. (1940). *The Measurement of Intelligence of Infants and Young Children*. New York, NY: The Psychological Corp.

Coley, I. L. (1978). *Pediatric Assessment of Self-Care Activities*. Saint Louis: C. V. Mosby.

Cohen, M., & Gross, P. (1979). *Developmental Resource*. New York: Grune and Stratton.

Doll, E. A. (1966). *Preschool Attainment Record*. Circle Pines, MN: American Guidance Service.

Doll, E. A. (1965). *Vineland Social Maturity Scale*. Circle Pines, Minnesota: American Guidance Service.

Frankenburg, W. K., and Dodds, J. B. (1969). *Denver Developmental Screening Test.* Denver, CO: University of Colorado Medical Center.

Gesell, A. L. (1940). *The First Five Years of Life: A Guide to the Study of the Preschool Child from the Yale Clinic of Child Development*. New York, NY: Harper Brothers.

Greenberger. S., & Thum, S. (1975). *Sequential Testing and Educational Programming*. San Rafael: Academic Therapy Publications.

Hedrick, D., Prather, E., & Tobin, A. (1975). *Sequenced Inventory of Communication Development*. Seattle: University of Washington Press.

Hurlock, E. B. (1972). *Child Development.* Fifth Edition. New York, NY: McGraw-Hill.

Illingworth, R.S. (1975). *The Development of the Infant and Young Child, Normal and Abnormal.* Sixth Edition. New York, NY: Churchill Livingston.

Knobloch, H., & Pasamanick, B. (1968). *Gesell and Amatruda's Developmental Diagnosis.* St. Louis: McGraw-Hill, 1968.

LaCrosse, E., et. al. (date unknown). *Skills Sequence Checklist.* Omaha: University of Nebraska Medical Center.

Maunder County Office of Education. (1970). *Maunder Pupil Developmental Progress Scale*, Salines, California.

Sharp, E., & Loumeau, C. (1975). *Assessment by Behavior Rating Manual.* Tucson: University of Arizona.

Sheridan, M. D. (1968). *The Developmental Progress of Infants and Young Children.* London, England: H.M.S.O.

Slosson, R. L. (1963). *Slosson Intelligence Test.* East Aurora, NY: Slosson Educational Publications.

Stott, L. (1967). *Child Development.* New York: Holt, Rinehart and Winston.

Terman, L. M., and Merrill, M. (1937). *Measuring Intelligence: A Guide to the Administration of the New Revised Stanford-Binet Tests of Intelligence.* Boston, MA: Houghton-Mifflin.

Vannier, M., Foster, M., & Gallahue, D. (1973). *Teaching Physical Education in Elementary Schools.* Philadelphia: Saunders.

Weiss, C., & Lillywhite, H. (1976). *Communicative Disorders.* St. Louis: CV Mosby Company, 1976.

Zimmerman, I., Steiner, V., & Evatt, R. (1969). *Preschool Language Scale.* Columbus: Charles E. Merrill Publishing Co.

LAP-3 Reference Codes

The items in the LAP-3 were developed from work of the following researchers. Each item is coded according to the chart below on the following pages.

A&B	Alpern & Boll
BANGS	Bangs
BAY	Bayley
CAP	Caplan
CAT	Cattell
CEC	Communicative Evaluation chart
COL	Coley
C&G	Cohen & Gross
DOLL	Doll
FRANK	Frankenburg
GES	Gessell
HPF	Hardin & Peisner-Feinberg
HUR	Hurlock
ILL	Illingworth
K&P	Knobloch & Pasamanick
LAP-D	Learning Accomplishment Profile-Diagnostic
MPS	Merrill-Palmer Scale
MPDPS	Maunder Pupil Developmental Progress Scale
PLS	Preschool Language Scale
S&L	Sharp & Loumeau
SHER	Sheridan
SICD	Sequenced Inventory of Communication Development
SLO	Slosson
SSC	Skills Sequence Checklist
STEP	Sequential Testing and Educational Programming
STOTT	Stott
TER	Terman
VAN	Vannier

Complete List of LAP-3 Items

GROSS MOTOR

Developmental Age	Item Number	Behavior	Source
12-17 months	1.	Stands alone	BAY
	2.	Walks alone, 3 steps	BAY
18-23 months	3.	Stoops to pick up toy from floor	K&P, SHER
	4.	Seats self in small chair	ILL, K&P
	5.	Pushes and pulls large object	SHER
24-29 months	6.	Walks up and down stairs, hand held	LAP-D
	7.	Kicks ball while standing still	GES, K&P
	8.	Jumps in place	BAY, FRANK
30-35 months	9.	Walks backwards	BAY
36-41 months	10.	Stands on 1 foot, 1 second	FRANK, K&P, SHER
	11.	Jumps from 8" high object	GES, ILL, K&P
	12.	Walks up stairs alternating feet, without assistance	GES
	13.	Stands with heels together and arms at side	GES, SSC
	14.	Pedals tricycle around wide corners	GES, K&P, SHER
	15.	Standing broad jumps, 8-1/2"	FRANK
	16.	Walks on line	GES
	17.	Walks on tiptoes	BAY, SHER
	18.	Throws ball overhand, 5 feet	A&B, GES, SHER
42-47 months	19.	Catches ball with extended stiff arms	GES, SHER
	20.	Kicks large rolling ball (from standing still position)	HPF
	21.	Stands on 1 foot, 5 seconds	FRANK, K&P, SHER
	22.	Walks on circular line	GES
48-53 months	23.	Walks forward heel-to-toe	FRANK
	24.	Climbs ladders of playground equipment	SHER
	25.	Throws ball overhand, 10 feet	GES, K&P
	26.	Hops on 1 foot	FRANK, SHER
	27.	Walks up and down stairs alternating feet, without assistance	GES, ILL, SHER
	28.	Skips on 1 foot (gallops) forward	GES, ILL, SHER
	29.	Pedals tricycle around obstacles and sharp corners	GES, SHER
	30.	Catches ball with arms bent at elbows	GES

Developmental Age	Item Number	Behavior	Source
54-59 months	31.	Hangs from bar	MPDPS
	32.	Marches rhythmically to music	GES, SHER
	33.	Touches toes with both hands	SHER
	34.	Stands on tiptoes with hands on hips	STOTT
	35.	Stands on 1 foot with arms folded across chest	SHER, GES
	36.	Stands on each foot alternately	SHER
	37.	Catches bounced ball	FRANK
60-65 months	38.	Walks up and kicks ball	GES
	39.	Jumps backward	SSC
	40.	Jumps over yardstick	GES
	41.	Runs 35-yard dash	GES
	42.	Running broad jumps	GES
	43.	Swings each leg separately back and forth	VAN
	44.	Hops forward on each foot separately	SHER
66-71 months	45.	Skips on alternate feet	GES, K&P, SHER
	46.	Stands on each foot alternately with eyes closed	GES, K&P
	47.	Walks backward heel-to-toe	FRANK
72+ months	48.	Jumps and turns	SSC
	49.	Bounces ball with 1 hand and catches with 2 hands	C&G
	50.	Pulls up and holds chin above overhead bar	MPDPS
	51.	Catches ball with 1 hand	GES
	52.	Throws small ball at target	HPF
	53.	Standing broad jumps, 38"	GES
	54.	Jumps rope	A&B

FINE MOTOR

12-17 months	1.	Beats 2 spoons together	CAT
	2.	Places 1 cube in cup	CAT, K&P
18-23 months	3.	Builds tower of 3-4 cubes	GES, K&P
24-29 months	4.	Pounds, squeezes and pulls clay	GES
	5.	Unscrews lid of bottle	GES, K&P
30-35 months	6.	Turns pages of book singly	GES, K&P
	7.	Strings 1" beads	LAP-D
	8.	Turns handle of eggbeater	CAT, MPS
	9.	Folds and creases paper	CAT, MPS

Developmental Age	Item Number	Behavior	Source
36-41 months	10.	Makes flat round "cake" out of clay	GES
	11.	Puts 6 pegs in pegboard	MPS
	12.	Weaves string randomly through holes in sewing board	LAP-D
	13.	Closes fist and wiggles thumb, right and left	SHER
	14.	Picks up small objects with tongs	MPDPS
	15.	Builds tower of 10 cubes	GES, K&P
	16.	Cuts paper with scissors	SHER
	17.	Imitates building "bridge" with cubes	GES, ILL, K&P
42-47 months	18.	Rolls "snake" from clay	GES
	19.	Makes ball out of clay	GES
	20.	Winds up toy	MPDPS
	21.	Strings 1/2" beads	SHER
48-53 months	22.	Places small objects into bottle	GES, K&P
	23.	Spreads fingers on 1 hand and brings thumb into opposition with each finger in turn	MPS, SHER
	24.	Punches individual computer keys	HPF
	25.	Cuts line with scissors	GES
	26.	Imitates building "gate" with cubes	GES, ILL, K&P
54-59 months	27.	Uses pencil sharpener	MPDPS
	28.	Winds thread on spool	GES
	29.	Puts paper clips on papers	MPDPS
	30.	Folds and creases paper horizontally and vertically	GES
60-65 months	31.	Crumples tissue paper into ball with 1 hand	GES
	32.	Cuts square with scissors	S&L
	33.	Inserts prefolded material into envelope	MPDPS
	34.	Makes recognizable objects out of clay	GES
	35.	Folds and creases paper horizontally and vertically	GES
66-71 months	36.	Ties knot	TER
	37.	Builds 4 steps with 10 small blocks from model	LAP-D
72+ months	38.	Punches hole in paper with handheld paper punch	HPF
	39.	Cuts out horse picture	A&B, S&L
	40.	Builds structure with blocks	HPF

PRE-WRITING

Developmental Age	Item Number	Behavior	Source
12-17 months	1.	Marks with pencil, marker, or crayon	CAT
18-23 months	2.	Scribbles spontaneously	CAT, K&P
24-29 months	3.	Imitates vertical line	SHER, SLO
	4.	Imitates horizontal line	SLO
30-35 months	5.	Imitates circular stroke	GES, K&P
	6.	Finger-paints using whole hand	GES
	7.	Holds pencil with thumb and fingers instead of fist	ILL, K&P
	8.	Paints lines, dots, circular shapes	GES
36-41 months	9.	Copies circle	FRANK, GES, K&P
	10.	Imitates H stroke	GES
	11.	Imitates cross	GES, ILL, K&P
42-47 months	12.	Holds paper in place with other hand while writing or drawing	GES
	13.	Finger-paints using fingers and whole hand	GES
	14.	Paints unrecognizable "picture"	GES
	15.	Traces diamond-shaped pathway	GES, K&P
	16.	Uses a variety of tools to write or draw	HPF
48-53 months	17.	Finger-paints using fingers, hand, and arms	GES
	18.	Holds paint brush with thumb and fingers instead of fist	GES
	19.	Copies cross	GES, K&P
	20.	Draws person with 2 body parts	GES, K&P
54-59 months	21.	Copies H	SHER
	22.	Copies T	SHER
	23.	Copies square	DOLL,GES,ILL
	24.	Copies simple word	HUR
	25.	Prints any 2 letters without model	LAP-D
	26.	Copies V	SHER
60-65 months	27.	Draws recognizable person with 6 distinct body parts	FRANK, GES
	28.	Copies first name	GES
	29.	Paints recognizable picture	GES
	30.	Uses a variety of tools for writing letters or numerals	HPF
	31.	Copies triangle	GES, ILL, K&P
	32.	Draws simple house	SHER

Developmental Age	Item Number	Behavior	Source
66-71 months	33.	Prints first name	DOLL
	34.	Copies rectangle with diagonals	GES,K&P
	35.	Writes numerals 1-9	MPDPS, GES
72+ months	36.	Prints first and last name	GES
	37.	Writes numerals 1-19	MPDPS, GES
	38.	Copies diamond	GES, ILL, K&P

COGNITIVE

Developmental Age	Item Number	Behavior	Source
12-17 months	1.	Removes lid box to find hidden toy	BAY
18-23 months	2.	Attains toy with stick	BAY
	3.	Places "all" blocks in a cup	LAP-D
24-29 months	4.	Pulls mat to get object	BANG
	5.	Completes 3-piece formboard	CAT, TER
	6.	Gives object similar to a familiar sample	DOLL
30-35 months	7.	Repeats 2 digits	CAT
	8.	Gives 1 object	CAT, GES
36-41 months	9.	Points to *big* object	DOLL, W&L
	10.	Responds to concepts of *empty* and *full*	C&C, LAP-D
	11.	Sorts cubes of 2 different colors	S&L
	12.	Points to *little* object	DOLL, W&L
	13.	Counts by rote to 3	CEC
	14.	Matches 4 colors	SHER
	15.	Points to circle	C&G
	16.	Repeat 3 digits	GES
	17.	Adapts to formboard reversal	GES, ILL, K&P
	18.	Gives *both* objects	W&L
	19.	Gives 2 objects	GES
42-47 months	20.	Responds to concepts of long and short	FRANK, PLS, LAP-D
	21.	Gives *heavy* object	GES
	22.	Names 4 colors	K&P
	23.	Classifies pictures by pointing	PLS
	24.	Matches sets of cubes	PLS
	25.	Completes 3-piece puzzle	MPS
	26.	Counts 3 objects	DOLL
	27.	Matches related pictures	S&L
48-53 months	28.	Points to picture of *tall* object	C&G
	29.	Points to pictures of daytime and nighttime	DOLL
	30.	Points to *rough* and *smooth* textures	DOLL, PLS
	31.	Points to *different* object	W&L
	32.	Discriminates verbal absurdities by answering questions	MPDPS, STEP

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Developmental Age	Item Number	Behavior	Source
	33.	Points to *hard* and *soft* textures	W&L
	34.	Counts by rote to 10	GES
	35.	Names missing object	W&L
	36.	Verbalizes understanding of motion for 3 different items	HPF
	37.	Completes 6-piece puzzle (non-inset type)	LAP-D
	38.	Place rings on stack toy according to size	MPDPS
54-59 months	39.	Repeats 4 digits	GES
	40.	Gives 3 objects on request	GES
	41.	Counts 4 objects	DOLL, GES
	42.	Names 8 colors	K&P
	43.	Names the consequence for 2 actions	LAP-D
	44.	Points to triangle	C&G
	45.	Points to square	C&G
	46.	Names numerals 1-3	MPDPS
	47.	Tells use of sense	W&L
	48.	Names familiar melody	GES
	49.	Names the cause for 3 given events	LAP-D
60-65 months	50.	Imitates tapping pattern	PLS
	51.	Points to sets with *more*	C&G
	52.	Points to picture of *first* in line	C&G
	53.	Matches numerals 1-10	C&G
	54.	Points to sets with *less*	C&G
	55.	Points to rectangle	C&G
	56.	Counts 10 objects	GES
	57.	Names and tells use of clock	C&G
	58.	Points to picture of *last* in line	C&G
	59.	Measures paper with non-standard unit	HPF
	60.	Completes bead patterns	HPF
	61.	Predicts and tests hypothesis	HPF
66-71 months	62.	Counts by rote to 20	W&L
	63.	Points to *middle* object	C&G
	64.	Arranges shapes in order from *smallest* to *largest*	C&G
	65.	Describes the weather	MPDPS
	66.	Names numerals 1-9	MPDPS
	67.	Tells numbers that follow 8, 3, 6, 9	SLO
	68.	Names and tells use of calendar	C&G
	69.	Tells number of halves in whole	SLO
	70.	Matches picture sets 1-3 with numerals	C&G
	71.	Places numerals 1-5 in correct sequence	STEP
72+ months	72.	Counts 20 objects	C&G
	73.	Gives 7, 6, 8, 10 objects	TER, W&L
	74.	Counts by rote to 30	K&P, W&L
	75.	Names numerals 1-19	MPDPS
	76.	Verbalizes understanding of 1 season	HPF
	77.	Tells correct number of fingers on separate hands and both hands together	GES, ILL

Developmental Age	Item Number	Behavior	Source
	78.	Draws logical conclusion from experiment	HPF
	79.	Adds number within 5	GES, K&P
	80.	Points to left and right sides of body	GES, ILL
	81.	Subtracts numbers within 5	GES, K&P
	82.	Names 7 days of the week	ILL
	83.	Dials/Punches a written telephone number	A&B
	84.	Tells time on the hour	C&G
	85.	Tells similarities and differences	SLO
	86.	Follows right and left double directions	GES, PLS
	87.	Names 4 coins	ILL

LANGUAGE

Developmental Age	Item Number	Behavior	Source
12-17 months	1.	Says 2 words besides "ma-ma" and "da-da"	CAT, GES
18-23 months	2.	Names 1 object	BAY, GES
	3.	Follows 1-step directions	GES, K&P
	4.	Points to pictures in book	E-LAP
24-29 months	5.	Speaks in 2-word sentences	BAY, GES
	6.	Points to 5 pictures of common objects	GES, K&P
	7.	Points to 4 body parts	GES, ILL
	8.	Names 3 pictures of common objects	GES, ILL, K&P
30-35 months	9.	Points to pictured object by use	CAT, PLS
	10.	Points to 3 pictures of common actions	W&L
	11.	Speaks in 3-word sentences	GES, K&P
	12.	Uses regular plurals	GES
36-41 months	13.	Points to 10 pictures of common objects	GES, K&P
	14.	Names 3 pictures of common actions	GES, K&P
	15.	Answers 1 question regarding physical needs	GES, K&P, PLS
	16.	Speaks "intelligibly" (articulates familiar words)	ILL
	17.	Names 8 pictures of common objects	GES, K&P
	18.	Asks how, why, where, when, and what questions	HPF
	19.	Listens "attentively" to stories	SHER
	20.	Uses personal pronouns - I, you, me	SHER
	21.	Says (or sings) words to nursery rhyme or song	GES, K&P, SHER
42-47 months	22.	Delivers 1-part verbal message	MPDPS
	23.	Follows 2-step directions in proper sequence	GES, K&P
	24.	Names 10 pictures of common objects	GES, ILL, K&P
	25.	Demonstrates understanding of 3 prepositions by placing cube	GES, K&P, PLS
	26.	Points to 8 body parts	PLS
	27.	Responds to *how* and *where* questions	W&L

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Developmental Age	Item Number	Behavior	Source
	28.	Answers *if-what* questions	SICD
	29.	Shows front of book	HPF
48-53 months	30.	Pantomimes definitions of words	S&L
	31.	Discriminates letters	HPF
	32.	Discriminates *is* and *is not* pointing to objects	
	33.	Points to where reader begins in book	
	34.	Demonstrates understanding of 4 prepositions by placing cube	GES, K&P, PLS
	35.	Tells name of 2 printed letters	HPF
	36.	Uses prepositions	SICD
	37.	Selects 4 (out of 5) pictures related to a sentence read aloud	LAP-D
	38.	Tells use of objects	GES, W&L
	39.	Answers 3 questions regarding physical needs	PLS
	40.	Repeats 12-syllable sentence	GES, W&L
	41.	Gives account of recent experiences in order of occurrence	SHER
54-59 months	42.	"Reads" favorite books independently	HPF
	43.	Tells opposites	PLS
	44.	Tells name of printed letters in own name	HPF
	45.	Discriminates printed words	HPF
	46.	Participates in sustained conversations with peers	HPF
	47.	Uses compound sentences	MPDPS
	48.	Tells what common things are made of	W&L
60-65 months	49.	Reads 2 common words from familiar environment (e.g., signs, labels)	HPF
	50.	Tells definition of concrete nouns	SHER, W&L
	51.	Names source of 15 actions	GES, MPS
	52.	Tells a story using picture book	W&L
	53.	"Reads" books with friends during play	HPF
	54.	Follows 3-step directions in proper sequence	GES, K&P
	55.	Delivers 2-part verbal message	MPDPS
	56.	Tells name of 10 printed letters	HPF
66-71 months	57.	Points to pictured print material by use	HPF
	58.	Points to title of book	HPF
	59.	Rhymes words	A&B
	60.	Tells beginning sounds	HPF
72+ months	61.	Arranges picture story in sequential order	HPF
	62.	Tells name of 26 capital letters	C&G
	63.	Tells beginning sounds of printed words	HPF
	64.	Identifies similar beginning sounds	HPF
	65.	Identifies author of book	HPF
	66.	Discriminates words from nonsense syllables	HPF
	67.	Tells a story without using pictures	A&B, W&L
	68.	Reads 5 printed words	LAP-D
	69.	Identifies similar ending sounds	HPF

SELF HELP

Developmental Age	Item Number	Behavior	Source
12-14 months	1.	Finger feeds self for part of meal	GES
15-17 months	2.	Pulls off socks	DOLL
	3.	Shows wet or soiled pants	GES, K&P
18-23 months	4.	Drinks from cup/glass	DOLL
24-29 months	5.	Uses toilet when taken by adult	GES, K&P
	6.	Asks for food, drink, or toilet when needed	GES, SLO
	7.	Feeds self with spoon (held with fist)	K&P, SHER
	8.	Removes coat	DOLL
30-35 months	9.	Dries own hands	DOLL
	10.	Puts on coat	DOLL
36-41 months	11.	Feeds self with fork (held with fist)	COL, SHER
	12.	Holds cup/glass when drinking with one hand	GES
	13.	Wipes nose with tissue	COL
	14.	Turns faucet on and off	COL
	15.	Turns door knob and opens door	A&B
	16.	Brushes teeth *with* assistance	COL, GES
	17.	Gets drink of water	DOLL
	18.	Undresses completely *with* assistance	GES
	19.	Demonstrates caution and avoids potentially harmful objects or activities	HPF
	20.	Pours from pitcher	GES, K&P
	21.	Puts on shoes (often on incorrect feet)	GES, K&P
42-47 months	22.	Unties and removes shoes	GES
	23.	Walks to classroom from bus/play area following adult	MPDPS
	24.	Washes and dries hands	DOLL
	25.	Flushes toilet after toileting	COL
	26.	Goes to toilet alone	DOLL
	27.	Feeds self with spoon or fork (held with fingers)	COL
	28.	Places paper towel into waste basket after use	MPDPS
	29.	Unbuttons front buttons	GES, ILL, K&P
48-53 months	30.	Puts on pull-up garment	COL
	31.	Puts on sock	GES
	32.	Zips non-separating front-zipper	COL
	33.	Buttons front buttons	GES, ILL, K&P
	34.	Puts on shoes (on correct feet)	GES
	35.	Dresses completely *without* assistance	GES, K&P,
	36.	Brushes teeth *without* assistance	GES, K&P, SHER

Developmental Age	Item Number	Behavior	Source
54-59 months	37.	Blows nose	DOLL
	38.	Rinses mouth after brushing teeth	MPDPS
	39.	Washes and dries face	DOLL
	40.	Inserts belt in loops	COL
	41.	Zips separating front zipper	COL
60-65 months	42.	Spreads food with table knife	A&B
	43.	Answers questions involving personal safety (e.g., fire, traffic/pedestrian safety)	HPF
	44.	Undresses and dresses completely *without* assistance	GES, K&P, SHER
66-71 months	45.	Laces shoes	GES, ILL, K&P
72+ months	46.	Fastens own seatbelt	HPF
	47.	Bathes self with assistance	DOLL
	48.	Brushes or combs hair	A&B
	49.	Cuts food with table knife and fork	A&B
	50.	Ties shoe laces	DOLL, GES, K&P

PERSONAL/SOCIAL

Developmental Age	Item Number	Behavior	Source
12-17 months	1.	Gives toy to adult upon request	ILL, K&P
18-23 months	2.	Imitates household activities (i.e., housework, cooking, using computer)	FRANK
	3.	Plays beside other children (parallel play)	DOLL
24-29 months	4.	Pulls person to show achievements	K&P
	5.	Follows directions for some routine activities	HPF
	6.	Refers to self by name	GES, K&P, REEL
	7.	Initiates own play activities	DOLL
30-35 months	8.	Interacts with familiar adults	HPF
	9.	Tells first name	GES, K&P
	10.	Indicates preferences in peer interactions	HPF
36-41 months	11.	Plays simple group games	GES
	12.	Tells age	GES, SHER
	13.	Puts toys away with supervision	GES
	14.	Initiates interactions with familiar adults	HPF
	15.	Tells gender	GES, K&P, SHER

Developmental Age	Item Number	Behavior	Source
	16.	Responds to initial greeting by adult	SICD
	17.	Shares toys	GES, SHER
	18.	Expresses displeasure verbally rather than physically	GES
	19.	Takes turn	K&P, SHER
42-47 months	20.	Separates from parent easily	FRANK
	21.	Plays with other children (associative play)	GES, K&P
	22.	Tells full name	GES, K&P
	23.	Calls attention to own performance	GES, K&P
48-53 months	24.	Plays cooperatively with other children	DOLL, GES, K&P
	25.	Participates in dramatic make-believe play	GES, SHER
	26.	Tells names of siblings	MPDPS
	27.	Follows classroom rules	HPF
	28.	Asks permission to use items belonging to other people	A&B
	29.	Names 2 emotions	A&B
	30.	Sympathizes with peers who are upset or hurt	HPF
	31.	Expresses own feelings verbally	HPF
	32.	Puts toys away without supervision	A&B, GES
54-59 months	33.	Performs for others	DOLL
	34.	Assists peers in need	HPF
	35.	Responds positively to accomplishments of peers	HPF
60-65 months	36.	Chooses own friends	SHER
	37.	Engages in exchange of ideas with peers	HPF
66-71 months	38.	Helps adult with simple tasks	DOLL, K&P
	39.	Plays simple competitive table games	DOLL
	40.	Goes on errands outside classroom	GES
	41.	Tells birthday (month and day)	GES, SHER
72+ months	42.	Works in small groups	MPDPS
	43.	Dances a pattern in a group	DOLL
	44.	Shows understanding and respect for individual differences	HPF
	45.	Tells complete address	HPF