Child Development Inventory

by Harold Ireton, PhD

Social Development

Self Help

Gross Motor

Fine Motor

Expressive Language

Language Comprehension

Letters and Numbers

Age   1   2   3   4   5   6

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APPRECIATION

In the future, we would appreciate hearing from Child Development Inventory users about how you are using the CDI, your suggestions, and about any research you may be doing with it.

INTRODUCTION

Developmental assessment of a young child needs to include information from the child's parents. Parents' observations of their children and their concerns about them can provide critical information about children's development and needs. Arnold Gesell, the father of developmental pediatrics, recognized this years ago (1940). Following Gesell's lead, the Denver Developmental Screening Test includes the parent's report of the child's behavior along with professional observation and brief testing. In early childhood/special education, the importance of involving parents in assessment and educational planning for their child has been recognized by mandating parent involvement in this process (Public Law 99-457).

The Child Development Inventory (CDI) (1992) replaces the original Minnesota Child Development Inventory (MCDI) (1972). Both inventories were designed to provide systematic ways of obtaining in-depth developmental information from parents. Twenty-five years ago, the MCDI reseach was undertaken because of our observation that parents' reports of their children's developmental skills usually matched rather well with the children's test results. Research has since confirmed the observation that most parents of young children can provide accurate reports of their child's present development. This is especially true when they are asked to report in a straightforward systematic fashion, as with the MCDI.

The MCDI measures the present development of one- to six-year-olds based on the mother's report of what she has seen her child doing. Our research with this inventory was based on mothers' reports of their children's activities because, for most children, the mother is the parent who knows the child best. While inventory norms are based on mothers' reports, the child's father or some other caregiver or teacher could complete the inventory if they have observed the child's behavior extensively. The MCDI results provide a profile of the child's present development in seven areas: gross motor, fine motor, expressive language, language comprehension, situation comprehension, self-help, and personal-social. The inventory also includes a measure of overall development called the General Development Scale.

Initially, the MCDI was designed to help identify and assess children with developmental problems. Subsequently, we discovered that concerned parents welcomed the opportunity to be involved in the assessment of their child. This was contrary to some professionals' assumption that the MCDI was "too long" and would be a burden to parents. In effect, parents became collaborators in the assessment process rather than passive observers. In conferences discussing professionals' assessments of their child, the parents' perceptions, concerns, and MCDI reports provided the starting point. In the process, parent-professional communication was greatly improved. The MCDI has also been used as a measure of developmental progress with normal children. Here the goal has been enhancing parent involvement in early childhood education.

The MCDI has been widely used in preschool and pediatric settings. It has been the subject of extensive research over the past twenty years. Other child development inventories have been created for screening. These include the Minnesota Infant Development Inventory, Early Child Development Inventory, and Preschool Development Inventory (see appendix).

THE CHILD DEVELOPMENT INVENTORY

The new Child Development Inventory is similar to the original MCDI. This revision was undertaken to update the MCDI and to improve upon it in two important ways: first, to create a more comprehensive set of items in terms of age coverage and to eliminate poor items; second, to provide a contemporary representative norm sample. The CDI is also simpler and easier to use. The CDI measures development in eight areas: social, self help, gross motor, fine motor, expressive language, language comprehension, letters, and numbers. It also includes a General Development Scale.

The CDI goes beyond the MCDI in that it has added items to measure parent's concerns about the child's vision and hearing, health, and growth as well as development. It also includes new items to measure various behavior and emotional problems of young children. Children's health, development, and adjustment are intimately related to each other. Illnesses such as chronic ear infections may interfere with a child's hearing, ability to attend, and language development. Chronic illnesses such as asthma may interfere with the child's ability to function and compromise their social development and other learning. Children with behavior problems, such as attention-activity level problems, or emotional problems, such as extreme shyness or fearfulness, will not be able to learn as well. The CDI provides a picture of the child's present development and possibly related symptoms and problems.

The CDI is for the assessment of children 15 months to six years of age and for older children who are judged to be functioning in the one to six-year range. The CDI contains only a limited number of infant items. For children under age 15 months, the Minnesota Infant Development Inventory is more appropriate.

The CDI consists of a booklet and answer sheet for the parent to complete and a Child Development Inventory Profile sheet for recording results. The booklet contains 270 statements that describe the behaviors of children in the first six and one-half years of life. These items describe developmental skills of young children that are observable by parents in everyday situations. These items were found, through research, to differentiate older children from younger children. In the CDI booklet, the items are grouped by scale. Items in each scale are in random age order. In the instructions the parent is asked to indicate those statements which describe the child's behavior by marking YES or NO on an answer sheet. Scoring is done by simply counting the number of YES responses for each of the scales using a single scoring template. The scores for the scales are then recorded on the Child Development Inventory Profile sheet. The profile pictures the child's development in comparison to norms for children age one to six years. The age norms of the profile are based upon a sample of 568 children one to six years-three months old.

The booklet also includes 30 problems items that describe various symptoms and behavior problems of young children. The problems items were derived from our research with the Minnesota Prekindergarten Inventory, which assesses maturity for kindergarten, and from the Preschool Development Inventory, which is a brief preschool screening measure for three- to six-year-olds.

CDI Items

The items in the CDI booklet are the result of a long process of item generation and item selection. The generation phase consisted of creating statements describing young children's behavior from a broad survey of the child development literature and from the content of psychological tests for preschool-age children. Where there appeared to be gaps in the literature, particularly from a parent's perspective, additional statements were written. The initial MCDI pool of "crude" items consisted of about two thousand statements. Duplicate items were excluded and the remaining items reworded in simple descriptive language.

The initial criteria for including items were that they (1) represented young children's developmental skills, (2) were observable by parents in everyday situations, (3) were descriptive and clear, and (4) were potentially age-discriminating. On the basis of these criteria 673 statements were selected. The age-discriminating power of these items was then determined on an item validation sample of 887 white children (441 males, 446 females) from one month to six and one-half years of age. The age-discriminating power of each item was measured by the rate of increase in the percentage of children passing the item with increase in age from two months to six and one-half years. Age discriminating items which showed a systematic increase in the percentages of children passing with increase in age were included in the MCDI scales.

The age level assigned to each item refers to the age at which the behavior described first appears in a large enough proportion of children to be considered reasonably characteristic of that age. The age level of an item was defined as the age at which at least 75 percent of parents answered YES to the statement. The age level of each item was determined for each sex. Where there was a statistically significant sex difference (p.<.01), age level was designated separately for each sex. This analysis yielded a set of items which spanned the developmental age range of two months to about six and one-half years.

For the new CDI, a revised set of items, which included most of the MCDI items, and a new norm group were used. From these results, 270 age-discriminating items were selected for the CDI.

CDI Scales

The 270 developmental items of the CDI are grouped to form scales including: Social, Self Help, Gross Motor, Fine Motor, Expressive Language, Language Comprehension, Letters, Numbers, and General Development. These scales measure areas of development and learning that are identified in the child development literature, various psychological tests, and early childhood/special education eligibility guidelines. (PL99-457). These scales were not derived by factor analysis. The scales are intended to be meaningful to clinicians, teachers, and parents. The scales are described below.

Social (S) - 40 items: Includes interaction with parents, children and other adults — from individual interaction to group participation.

Self Help (SH) - 40 items: Includes eating, dressing, bathing, toileting, independence and responsibility.

Gross Motor (GM) - 30 items: Includes walking, running, climbing, jumping, riding, balance, and coordination.

Fine Motor (FM) - 30 items: Includes eye-hand coordination — from picking up objects to scribbling and drawing.

Expressive Language (EL) - 50 items: Expressive communication, from simple gestural, vocal, and verbal behavior to complex language expression.

Language Comprehension (LC) - 50 items: Language understanding, from simple comprehension to understanding of concepts.

Letters (L) - 15 items: Knowledge of letters and words, including printing and early reading.

Numbers (N) - 15 items: Knowledge of quantity and numbers from simple counting to solving simple arithmetic problems.

General Development (GD) - 70 items: A summary scale that provides an overall index of development. It includes 10 of the most age discriminating items from each of the developmental scales and five items each from the Letters and Numbers scales.

The age range of each developmental scale can be appreciated by examining the number of items in each age level. The number of items by age level for each scale are shown in Table 1.

Table 1
Age Range of CDI Scales - Number of Items by Age Level*

Scale/Age	0-1	1-2	2-3	3-4	4-5	5-6	6-6½	Total
Social	2	11	16	8	1	2	0	40
Self Help	3	12	6	9	6	3	1	40
Gross Motor	4	10	7	4	3	1	1	30
Fine Motor	5	5	7	6	6	1	0	30
Expr Lang.	2	8	23	13	2	0	2	50
Lang. Comp	5	9	14	16	3	3	0	50
Letters	0	0	0	2	4	1	8	15
Numbers	0	1	1	5	3	1	4	15
Total	21	56	74	63	28	12	16	270

*General Development Scale (GD) - items by age level shown later.

The 30 letters and numbers items used to be included in the MCDI Language Comprehension Scale. Most of these items describe skills of children age three and older. Therefore, the new Language Comprehension Scale has fewer items at the three- to six-year level than the old scale.

Problems Items

The last section in the CDI booklet includes 30 items that describe various symptoms and behavior problems that young children may have. These items do not form a scale as such. They cover a broad range - from vision and hearing to health and growth to eating, sleeping, and toilet training. Several items measure motor and language symptoms. Behavioral items describe various signs of immaturity, attention-activity problems, behavior problems, and emotional problems. The Problems items results are to be used to complement the results for the inventory scales. The logic is simply this - children succeed or struggle to learn not only as a result of developmental problems, but also because of other difficulties identified by the problems items.

Young Children's Development and Adjustment

The healthy development of young children sets the stage for their entry into the world of school. Their early development and social adjustment provide the base from which they will succeed or struggle in school. Many factors contribute to their development and interest in learning, including physical health, nutrition, vision and hearing, and the support and stimulation of parents and other care providers.

We believe that children's social development creates the context in which they develop and exercise all of their other abilities, such as motor skills and language skills. Children are social beings. They have a strong interest in being with others. They wish to belong and be accepted by others. This

is why the Social Scale is placed in the first position in the CDI profile. The child's social maturity is reflected in the Social Scale results and also by the presence or absence of behavioral problems included in the CDI Problems items.

The Self Help Scale complements the Social Scale in defining the child's development of independence skills - eating, dressing, washing, toileting. The development of these skills is based partly on the child's drive toward self-sufficiency, expressed in the words "I want to do it myself."

The two motor scales - Gross Motor and Fine Motor - describe the child's development of physical skills. They include large muscle or whole body coordination and the development of more finely tuned eye-hand coordination. It could be argued that children's first sense of mastery and basis for self-esteem is their own awareness of emerging physical competencies. This sense of competence is then reinforced by parent recognition of the child's emerging skills, most dramatically seen in the child's walking.

Expressive language, in simple terms, talking, and the child's developing comprehension of language link the child to the world in even more profound ways. The development of language comprehension, especially the understanding of concepts, provides the child with a whole new set of tools for adaptation and problem-solving.

Finally, moving toward school age, the child's understanding of concepts sets the stage for the use and understanding of printed symbols - letters, numbers and words.

Appreciating the child's developmental maturity in all these areas and considering the presence of any symptoms or adjustment problems provide a systematic overview of the child's functioning, strengths, and possible problems.

Links to Educational Planning/Intervention

The behaviors included in the CDI and the sequence of items in eight areas of development can provide a major resource for teachers. Unlike many developmental scales used in education, the developmental sequences described here are based on research information about when the majority of children display a certain behavior and about what they may do next. While there is more to child development and learning than is contained in the CDI scales and items, they do provide information for appreciating a child's development and needs. Teachers can add the CDI results to their own knowledge about young children and how they learn. We do hope that the CDI can be used along with other information, especially teacher observations, to provide the most appropriate and most effective education for young children.

Increasingly, the field of education is focusing on the importance of having clearly defined objectives. This is referred to as "outcome-based education." If this approach is to be useful, these learner outcomes must be based on a thorough understanding of child development and on a clear understanding of how young children learn best. This is especially true of language and cognitive development. We hope that the CDI will be used within the context of a larger understanding of children and education. The CDI is an assessment tool that, like any tool, may be used wisely and benefit children or inappropriately and hurt children. We welcome the thoughts of early childhood teachers and others who use the CDI as part of their assessment and educational process.

NORM SAMPLE

The norm sample provides age norms for children one to six years, three months of age. The norm sample was obtained in South Saint Paul, Minnesota. South Saint Paul is a primarily white, working class community. It is located in a large metropolitan area, Minneapolis-Saint Paul, but is neither inner-city nor surburban. It is located between Saint Paul and surrounding surburbs. Founded one hundred years ago, it is an established community that does not have extremes of wealth or poverty. The children in the public school system have an average IQ of 100 (mean eighth grade student performance on the Short Form Test of Academic Aptitude).

School census information was used to identify age-eligible children. Census data were most complete for five-year-olds enrolled in kindergarten (N=303); less complete for four-year-olds, (N=248); three-year-olds, (N=198); two-year-olds, (N=216); one-year-olds, (N=227). Initially, parents were contacted by telephone. If this was unsuccessful, they were contacted by mail. Among parents contacted by telephone, only a few refused to participate. Parents were sent a cover letter, a CDI booklet and answer sheet, and a Children's Problems List.

Child Development Inventory results were received for 608 children. Some returned answer sheets were excluded from the sample because of incomplete data (N = 30). Twenty-four children were reported to have disabilities or special problems on the CDI answer sheet. These problems ranged from major developmental disabilities (Down's syndrome, autism) or physical handicaps (cerebral palsy) to lesser developmental problems (speech, stuttering) to chronic illnesses (asthma, juvenile rheumatoid arthritis.) Ten children with major developmental disabilites were excluded from the norm sample. Table 2 shows the CDI norm sample (N = 568) by age and sex.

Table 2
Normative Sample Size by Age and Sex (N = 568)

Age	Male	Female	Total
12-14 mos.	13	10	23
15-17	12	8	20
18-20	12	6	18
21-23	16	14	30
TOTAL 1-2	53	38	91
2-0 - 2-2	20	10	30
2-3 - 2-5	11	13	24
2-6 - 2-8	9	11	20
2-9 - 2-11	10	14	24
TOTAL 2-3	50	48	98
3-0 - 3-2	11	11	22
3-3 - 3-5	7	10	17
3-6 - 3-8	13	17	30
3-9 - 3-11	14	16	30
TOTAL 3-4	45	54	99
4-0 - 4-2	9	13	22
4-3 - 4-5	10	10	20
4-6 - 4-8	13	15	28
4-9 - 4-11	14	20	34
TOTAL 4-5	46	58	104
5-0 - 5-2	14	11	25
5-3 - 5-5	13	27	40
5-6 - 5-8	33	17	50
5-9 - 5-11	17	25	42
TOTAL 5-6	77	80	157
6-0 - 6-2 years	10	9	19
TOTAL ALL AGES 12 mos - 6-2	281	287	568

Level of education for the norm group parents is shown in Table 3. Compared to the original norm group parents (1970) from Bloomington, Minnesota, a suburb of Minneapolis, South Saint Paul mothers' mean level of education is the same - 13 years. Fathers in South Saint Paul are less educated than Bloomington fathers were (mean - 13.5 years vs. 14.1 years). South Saint Paul fathers in this norm sample have a lower percentage of college graduates than Bloomington fathers did (20 percent vs 36 percent).

The norm sample is 95 percent white, which is representative of the Minneapolis-Saint Paul metropolitan area. Other large metropolitan areas certainly have much larger numbers of minority children, while smaller cities and towns nationwide are more adequately represented by a norm group with these racial and parental education characteristics.

Table 3
Norm Group Parents' Education in Years

	Mean	Standard Deviation	Years of Education 7-11	12	13-15	16	17+
Mother	13.3	1.6	1.0	36.7	45.6	13.6	3.1
Father	13.5	2.0	2.0	33.8	44.0	14.1	6.0

Racial and Cultural Fairness

The Child Development Inventory was standardized on a fairly average sample in terms of parents' educational background. However, it is an almost exclusively white sample. We believe that the items of the Child Development Inventory describe behaviors that are fairly representative of behaviors of young children in general in this country. We encourage users working with children of different racial and cultural groups to examine the items carefully. The CDI norms established on this normative sample should not be generalized to groups of children who are significantly different from the norm group. It is best to develop local norms for particular communities or school systems. This is not difficult if sufficient numbers of children are available. We would be glad to assist in this process.

The Inventory format may be inappropriate for parents of some racial and cultural groups and for parents with less than a high school education. The validity of CDI results depends on the parent's ability to read and understand the Inventory instructions and items. CDI users need to know whether the parent's primary language is English or some other language. Are they able to read and understand well enough? Have they completed high school, so that, probably, they can read at a seventh to eighth grade level, which the CDI instructions and items require?

Because of these issues, we created the Child Development Review, (CDR) (1990). The CDR is a parent interview alternative to completing the CDI. The CDR parent interview is carefully designed to make it a comfortable, positive experience for parents. The CDR includes a brief parent questionnaire, a map of child development in the first five years, and instructions for conducting a developmental interview. When necessary, the parent questionnaire information can be obtained as the initial part of the developmental interview.

CHILD DEVELOPMENT INVENTORY BOOKLET

It is important to understand clearly what the parent is being asked to report about their child. The CDI booklet, including instructions and the developmental scale items (270) and the problems items (30), is included here. Please read *A Word to Parents* and the *Instructions* for completing the CDI carefully. In the standard CDI booklet, the items within each scale are in random order. Here, for easier understanding, items are listed in developmental sequence. For each scale, within one year age bands, the items are listed in order of age level. The age level for each item - the 75 percent YES point - is listed after the item. The age level given is for a three month age band (12m = 12 to 15 months; 2-0 = two years to two years, three months). If there is a sex difference, the 75 percent point is listed for boys, then for girls.

child development inventory

Harold Ireton, Ph.D.

A Word to Parents

Parents' observations of their children can provide important information about their development. The Child Development Inventory includes statements that describe young children's behavior. The Inventory asks you to report what your child is doing. It can help to understand your child's development and needs.

Instructions

Please read each statement carefully. Use the Yes-No answer sheet to record your answers. If you need help reading or understanding the items or have any questions, please ask.

Fill in your CHILD'S NAME (print last name, skip one box, then first name), SEX, BIRTH DATE, and the DATE you COMPLETED this inventory.

Also, complete the FAMILY INFORMATION section, including your child's SPECIAL PROBLEMS or DISABILITIES, if any.

Answer YES or NO to each statement in the booklet to report what you have seen your child doing.

Answer YES — if the statement describes your child's *present* behavior. Also, answer YES if the behavior is something that your child *used to do*, like crawling and babbling.

Answer NO — if the statement does not describe your child's behavior. Also, answer NO if the behavior is something that your child is only *just beginning to* do or only does *sometimes*.

Answer YES by filling in the circle marked Y on the answer sheet; answer NO by filling in the circle marked N.

Example for a YES answer: ● Ⓝ
Example for a NO answer: Ⓨ ●

Use a pencil so that you can erase an answer if you want to change it. Be sure the number of the statement in the booklet matches the number you are marking on the answer sheet.

If your child is younger than two years, many of the statements will not describe his or her behavior. Even so, read all the statements and answer every statement with YES or NO.

SOCIAL SCALE - 40 items

Age 6-12m

11. Recognizes familiar adults and reaches for them.   6m
37. Shows affection: Gives hugs or kisses.   <12m

Age 1-2

20. Interested in his(her) image in a mirror.   12m
1. Greets people with "Hi" or similar expression.   15m
26. "Pretends" to do familiar activities like talking on telephone, being asleep.   15m
28. Shows affection toward other children.   15m
17. Wants a doll, teddy bear, blanket, etc. in bed with him(her). Or used to.   18m
4. Sometimes says "No" when interfered with.   18m
3. Shows sympathy to other children, tries to help and comfort them.   21m
23. Usually obeys when asked to do something or told not to.   21m
34. Usually shares toys or other possessions — may be occasional arguments.   21m
38. Usually responds well to correction — stops misbehaving   21m
18. Understands "Wait a minute." Waits patiently for short periods of time.   2-0, 21m

Age 2-3

6. Asks for help in doing things.   2-0
5. Helps a little with household tasks.   2-0
25. Plays with other children, doing things with them.   2-3
14. Makes or builds things with other children.   2-3
16. Asks you to "Look, watch me" when he(she) is doing something.   2-3
24. Offers to help others.   2-6
7. Says "I can't," "I don't know," or "You do it."   2-6
29. Speaks positively about self — says, "I'm good," "I'm big," etc.   2-6
32. Usually follows directions during supervised group activities with playmates.   2-6

33. Expresses complaints in words.   2-6
8. Pays attention well — listens to others.   2-6
9. Apologizes — says "I'm sorry" when he(she) does something wrong.   2-6
39. Fits into groups well — listens, shares, takes turns, contributes.   2-6
12. Plays physical games with other children such as tag, hide-and-seek, hopscotch, etc.   2-9
13. Asks for help from other children, such as help doing something, information or explanations.   2-9
31. Plays "pretend" games with other children, "house," etc. pretending to be "Mom or Dad, teacher, astronaut."   2-9, 2-3

Age 3-4

2. Tattles or tells on other children.   3-0
22. Plays games that involve taking turns and usually waits for his(her) turn.   3-0
30. Initiates activites involving other children.   3-0
10. Gives directions to other children.   3-0
21. Talks about how to do things with other children — tells ideas and listens to other children's ideas.   3-6
27. Makes excuses.   3-9
35. Acts in a protective way toward younger children.   3-9
36. Sometimes will sacrifice his(her) own wishes for the benefit of the group.   3-9

Age 4-5

19. Follows simple game rules in board games or card games.   4-3

Age 5-6

40. Shows leadership among children his(her) age, directing and helping them   5-0
15. Plays simple board games such as checkers.   5-3

SELF HELP SCALE- 40 items

Age 6-12m

57. Feeds self a cracker or cookie.	7m
66. Chews food.	9m
73. Picks up a spoon by the handle.	10m

Age 1-2

63. Removes socks.	12m
50. Lifts a cup to his(her) mouth and drinks.	12m
41. Feeds self with a spoon.	15m
53. Hands empty dish to mother or father.	15m
56. Remembers where things are kept in the house.	15m
58. Uses a small pail or other container for carrying things. Or used to.	15m
67. Tries to put on shoes. Or puts them on.	15m
72. Climbs on chair, stool, or box to reach things.	15m
47. Eats with a fork.	18m
42. Eats with a spoon with little spilling.	21m
52. Takes off shoes and socks.	21m
69. Unzips zippers.	21m

Age 2-3

70. Wipes up spills, using cloth or sponge.	2-0
74. Takes off unbuttoned shirt or blouse without help.	2-0
49. Opens door by turning knob and pulling.	2-0
43. Washes and dries hands.	2-6
54. Goes around the house independently; requires little supervision.	2-6
60. Washes self in bathtub — may need a little help.	2-6

Age 3-4

51. Puts on a shirt or blouse without help.	3-0

Age 3-4 (continued)

44. Toilet-trained for urine control and bowel movements.	3-0, 2-6
75. Brushes teeth without help.	3-0
80. Takes responsibility for self in eating, dressing, and washing — but may need a little help.	3-3
55. Undresses completely without help.	3-6, 3-0
64. Washes face without help.	3-9, 3-3
68. Notices when shirt (blouse) or pants are inside-out and turns them right-side-out.	3-9
48. Dresses and undresses without help, except for tying shoelaces.	3-9, 3-6
65. Stays dry all night.	4-3, 3-3

Age 4-5

62. Uses table knife for spreading.	4-3
45. Buttons one or more buttons.	4-3
78. Usually looks both ways when crossing streets.	4-6
46. Buttons a shirt, blouse, or coat, having all the buttons in the correct holes.	5-0, 4-3
79. Goes to the toilet without help; wipes self, flushes toilet, and washes hands.	5-0, 4-3
61. Takes care of personal belongings.	5-3, 4-6

Age 5-6

59. Puts shoes on the correct feet.	5-0
76. Pours self a drink.	5-0
71. Pours dry cereal and milk into a bowl without spilling.	5-3

Age 6

77. Ties shoelaces.	6+

GROSS MOTOR SCALE- 30 items

Age 6m-12m

97. Rolls over from back to stomach. Or used to. 6m

104. Sits without support. 7m

106. Pulls self to standing position. Or gets self
to standing. 9m

100. Sidesteps around furniture or crib while
holding on. Or walks. 10m

Age 1-2

81. Walks without help. 12m

93. Stands steady, without support. 12m

109. Climbs into an adult size chair and seats self. 12m

83. Throws a ball while standing. 15m

84. Runs. 15m

101. Runs well without falling. 18m

89. Kicks a ball. 18m

110. Shows good balance and coordination in
physical play activities such as running,
climbing, and jumping. 18m

93. Climbs on playground equipment. 21m

87. Walks up and down stairs alone. 21m

Age 2-3

85. Runs smoothly, turning corners and
making sudden stops. 2-0

103. Climbs up ladder and slides down slide
without help. 2-0

82. Jumps from steps with feet together. Or used to. 2-3

102. Stands on one foot for a few seconds
without support. 2-6

94. Does a forward somersault. 2-9

99. From a standing position, jumps over
objects or people. 2-9

88. Walks up and down stairs alone, one foot to
a step, alternating feet. 2-9

Age 3-4

91. When running, jumps over obstacles that
are in the way. 3-0

86. Rides around on tricycle using pedals. 3-0

92. Stands on one foot, steady, without support. 3-3

90. Hops on one foot, at least two times,
without support. 3-6

Age 4-5

95. Hops around on one foot without support. 4-3

108. Plays "catch" with other children; throwing to
them and catching the ball at least half the time. 4-6

96. Swings on swing, pumping by self. 4-9, 4-6

Age 5-6

105. Rides a two-wheeled bike, with or without
training wheels. 5-0

Age 6

107. Does cartwheels. 6+

FINE MOTOR SCALE - 30 items

Age 6-12m

94. Picks up objects with one hand.   5m

118. Transfers objects from one hand to the other.   6m

96. Holds two objects at the same time, one in each hand.   7m

102. Uses two hands to pick up large objects.   8m

106. Picks up small objects, such as bits of dry cereal, using thumb and one finger.   9m

Age 1-2

112. Builds a tower of two or more blocks.   12m

121. Scribbles with crayon or pencil. Or used to.   15m

132. Uses one hand more than the other; has a hand preference.   15m

139. Picks up two small toys with one hand.   15m

128. Builds a tower of five or more blocks.   21m

Age 2-3

135. Scribbles with a circular motion. Or used to.   2-0

136. Unscrews and screws on covers of jars or bottles.   2-0

138. Places single pieces — simple shapes or figures — in a puzzle board.   2-0

129. Turns pages of children's book one page at a time.   2-3, 21m

125. Attempts to cut with small scissors. Or cuts.   2-6

131. Builds a tower of eight or more blocks.   2-6

119. Holds crayon with fingers and thumb, somewhat like an adult.   3-0, 2-0

Age 3-4

137. Draws or copies vertical (|) and horizontal (__) lines.   3-0

124. Draws or copies a complete circle.   3-3

133. Builds things with blocks, such as a simple house, bridge, or car.   3-3

122. Cuts across paper with scissors from one side to the other.   3-6

115. Draws or copies two lines that cross (+).   3-6

116. Puts together puzzles with nine or more pieces.   3-6

Age 4-5

123. Draws recognizable pictures.   4-3

126. Draws or copies a square that has four good corners. (□).   4-3

127. Cuts with scissors, following a simple outline or pattern.   4-3

130. Draws pictures of people that have at least three parts, such as head, eyes, nose, mouth, hair, body, arms, or legs.   4-6

118. Draws pictures of complete people that have at least head, with eyes-nose-mouth, body, arms and legs, hands and feet.   4-9

134. Colors within the lines in a coloring book.   5-0, 4-0

Age 5-6

140. Draws and prints in a planned organized way.   5-0

EXPRESSIVE LANGUAGE SCALE - 50 items

Age 6-12m

152. Jabbers; makes sounds like he(she) is talking in sentences. Or used to.   <12m

141. Calls you "Mama" or "Dada" or similar name.   <12m

Age 1-2

176. Points to things.   12m

148. Says two or more words besides "Mama" or "Dada."   15m

164. Uses at least five words as names of familiar objects.   18m

180. Asks for "more" or "another one."   18m

150. Uses at least 10 words.   18m

182. Asks for a drink or for food, using words or sounds.   18m

184. Names a few familiar objects in picture books.   21m

170. Refers to his(her) things as "my" or "mine."   21m

Age 2-3

173. Whispers.   2-0

165. Uses at least one of the following words — "me," "I," "he," "she," "you," "it."   2-0

186. Names at least five body parts, such as eyes, nose, mouth, hands or feet, when asked.   2-0

185. Says "Please" and "Thank you."   2-0

167. Has a vocabulary of 20 or more words.   2-0

156. Tells what action is going on in pictures — for example, "Kitty is eating."   2-3

161. Talks in sentences at least four words long.   2-6, 2-3

145. Uses the word "you" in sentences.   2-6

163. Speaks clearly; is understandable most of the time.   2-6

147. Uses the words "don't," "can't," or "won't."   2-6, 2-0

160. Asks questions beginning with "what" or "where."   2-6

149. Uses the words "a," "an," and "the," for example, "Look, a dog." "See the kitty."   2-6

153. Uses the words "me," "my," and "I" correctly.   2-6

157. Sings simple songs.   2-6

158. Uses the word "not" in sentences.   2-6

172. Uses 50 or more different words in everyday conversation.   2-6

178. Uses plural words, adding "s," for example, "girls," "cars."   2-6

183. Talks in two to three word phrases. Or in longer sentences.   2-6

142. Talks in longer sentences to express complete thoughts — at least six words long.   2-9

175. Asks simple questions using correct grammar.   2-9

181. Talks with words in correct order.   2-9, 2-0

146. Describes objects specifically, in detail, for example, "Dolly has hair, a dress." "Doggie has a tail." etc.   3-0, 2-3

189. Says — pronounces — most words he(she) uses correctly.   3-6, 2-6

Age 3-4

144. Talks in the past tense correctly, for example, says "I played with Billy." "I did." "We went...."   3-0

162. Gives reasons for things, using the word "because...."   3-0

155. Talks about things that "could" or "might" happen, for example, "He could hurt himself if he's not careful."   3-0

179. Recites a nursery rhyme such as "Jack and Jill went up the hill to..."   3-0

166. Asks questions beginning with "why," "when," or "how."   3-0

187. Puts two sentences together with the words "and," "or," or "but."   3-0

188. Has a large vocabulary that is beyond simple counting.   3-0

159. Easily expresses his(her) ideas in complete sentences, using good grammar, and pronouncing most words correctly.   3-3

171. Uses plural pronouns such as "we," "they," "them," "us" correctly.   3-3

174. Names simple shapes such as a circle, square, triangle, and star.   3-3

169. Talks about things that have happened in detail, describing a series of events, for example, "We went to..., and we.... Then we...."   3-3

151. Makes statements such as "If I do..., then I can," or "When I..., then..."   3-6

168. Talks in long, complex sentences, ten words or longer.   3-6

Age 4-5

177. Asks the meaning of words.   4-3

143. Retells short stories such as Little Red Riding Hood; tells what happens in correct order and how the story ends.   4-6

Age 5-6

No items

Age 6

154. Uses irregular plurals correctly, for example, says "men," not mans, "mice," not mouses.   6-0

190. Names the days of the week in correct order.   6+

LANGUAGE COMPREHENSION SCALE - 50 items

Age 6-12m

191. Responds to his(her) name; turns and looks.   6m
211. Imitates some sounds that you make. Or used to.   10m
216. Usually comes when called.   11m
231. Waves "bye-bye" or good-by.   <12m
234. Understands "No No"; stops, at least briefly.   <12m

Age 1-2

220. Hands a toy to you when asked.   12m
214. Understands what "open" and "close" or "shut"
       mean; follows directions using these words.   15m
193. Points to at least three body parts, such as eyes,
       nose, mouth, hands or feet, when asked.   18m, 15m
195. Understands the meaning of "up" and "down."   18m
209. Follows simple instructions.   18m
194. Understands what "off" and "on" mean; follows
       directions using these words.   21m
222. Understands the meaning of at least three location
       words such as "in, on, under, beside."   21m
224. Answers questions like "What does a...
       doggie, kitty, duck...say?"   21m
207. Follows two-part instructions, for example,
       "Go to your room and bring me...."   21m

Age 2-3

206. Responds to simple questions appropriately
       with "yes" or "no."   2-0
237. Expresses likes and dislikes in words   2-3, 2-0
212. Says first name at least, when asked,
       "What's your name?"   2-3
223. Says when something is heavy.   2-3
202. Uses the words "big" and "little."   2-6
238. Talks about feelings; says he(she) feels
       "happy, sad, bad, or mad."   2-6
239. Identifies at least one color by name correctly .   2-6
217. Uses the words "fast" and "slow" correctly.   2-6
225. Tells whether a sound is loud or soft.   2-6
227. Uses the words "good" and "bad" to describe
       self and other children.   2-6
229. Understands the meaning of at least six
       location words, such as "in, on, under, beside,
       top, bottom, above, below."   2-6
203. Answers questions like "What do you do
       with a...cracker?...a hat?...a glass?"   2-9
221. Understands what "full" and "empty" mean;
       uses these words correctly.   2-9, 2-6
240. Talks about the qualities of objects, using descriptive
       words such as "small, red, good, funny."   2-9

Age 3-4

198. Refers to self and other children as "boy" or
       "girl"correctly.   3-0, 2-6
215. Answers questions like "What do you do when
       you are ...thirsty? ...hungry? ...tired?   3-0
205. Answers "If..., then?" questions such as "If you
       get hurt, then what do you do?"   3-0
219. Answers "What...for?" questions like "What
       is a stove for?...a book for?"   3-0
226. Says first and last name when asked.   3-0
232. Understands what "before" and "after" mean;
       uses these words correctly.   3-0
233. Understands what "easy" and "hard" mean;
       uses these words correctly.   3-0
235. Takes part in conversations, both talking
       and listening in turn.   3-3, 3-0
201. Identifies at least four colors by name correctly. 3-3
192. Answers "why?" questions, giving good
       explanations, for example, "Why do we wear coats? 3-3
199. Knows the meaning of "same" and "different";
       tells how two things are alike and how they
       are different.   3-3
200. When asked, "What is a...?," describes the
       object or tells what you do with it, for example,
       "An apple?" "Is red." or "You eat it."   3-3
236. Talks about the future, about what is
       "going to" happen.   3-6, 2-6
204. Answers the questions "What do you do with
       your...eyes? ...ears?"   3-6
228. Tells age correctly when asked,
       "How old are you?   3-6, 3-0
230. Carries out a series of 3 simple instructions in the
       right order, such as, "Do this..., then..., then...."   3-9

Age 4-5

210. Uses -- est words like biggest, strongest, greatest.   4-3
218. Tells where he(she) lives, naming town or city.   4-9
208. When asked, "What is a...?" talks about the group
       it belongs to, for example, "A horse?" "Is an
       animal." "An orange?" "Is a fruit."   4-9

Age 5-6

197. Knows right hand from left.   5-3
196. Uses the words "today," "yesterday," and
       "tomorrow"correctly.   5-3
213. Tells what a few objects are made of such
       as a coat, or chair.   5-6

LETTERS SCALE - 15 items

Age 3-4

241. Tries to read familiar books. Or reads them.   3-6, 3-0

244. Asks what signs say, such as road signs,
     advertising, etc.   3-9

Age 4-5

251. Prints a few letters or numbers.   4-3

254. Prints first name (or at least four letters).   4-6

246. Recognizes and names at least five letters
     of the alphabet.   4-6

245. Recites the alphabet, in order, without help.   4-9

Age 5-6

252. Prints a few simple words from a copy.   5-3

Age 6

255. Recognizes and names all the letters in the alphabet. 6-0

242. Recognizes a few simple words in a familiar book. 6-0

243. Prints two or more simple words from memory.   6+

253. Reads four or more words.   6+

248. Prints first and last name, with letters facing
     in the correct direction.   6+

247. Reads 15 or more words in a new book.   6+

249. Prints the alphabet - all 26 letters - by copying
     them or from memory.   6+

250. Attempts to read words by separating them
     into parts, for example, "el-e-phant."   6+

NUMBERS SCALE - 15 items

Age 2-3

269. Understands "one" and gives you just one
     when you ask for "one."   2-0

266. Points to or names the "bigger" of two
     objects when asked.   2-6

Age 3-4

257. Talks about things, comparing one to another, for
     example, says "This one is bigger, ...heavier, etc." 3-0

268. Counts three or more objects.   3-0

259. Tells when one object is longer or shorter
     than another object.   3-6

262. Recites numbers in order from 1 to 10.   3-9

265. Knows how many fingers there are on each hand.   3-9

Age 4-5

261 Recognizes and names a few single numbers.   4-0

256. Counts ten or more objects.   4-0

263. Knows what "half" means.   4-6

Age 5-6

258. Recites numbers in order from 1 to 30.   5-9

Age 6

264. Prints the numbers 1 through 9.   6+

260. Answers arithmetic questions such as
     "How much is 2+2? 1+4? 3+6?"   6+

267. Does simple subtraction: "How much is 2-1?
     4-2? 6-3?"   6+

270. Tells time: Reads clock in hours and minutes.   6+

End of CDI booklet developmental items (numbers 1-270).
The Problems items (271-300) appear after the following
description of the General Development Scale.

GENERAL DEVELOPMENT SCALE - 70 items

A summary scale providing an overall index of development consisting of the most age-discriminating items from the other scales. First, the numbers of items by scale and age level are shown in Table 4. Then the specific items are listed by scale and age level.

Table 4
General Development Scale Items By Scale and Age Level

Scale/Age	1-2	2-3	3-4	4-5	5-6	6+	Total
Social	3	5	2	0			10
Self Help	4	2	2	2			10
Gross Motor	5	3	2				10
Fine Motor	2	2	2	4			10
Exp. Language	2	4	4				10
Language Comp.	2	3	3	2			10
Letters				2	1	2	5
Numbers			2	1	1	1	5
Total	18	19	17	11	2	3	70

For one- to three-year-olds, there are relatively large numbers of social, self help, gross motor and expressive language items. For three- to six-year-olds there are relatively large numbers of fine motor, language comprehension, letters and numbers items. For three- to six-year-olds, at least, the general development scale provides a general index of cognitive development.

Social Scale - 10 items

Age 1-2
1. Greets people with "Hi" or similar expression. — 15m
4. Sometimes says "No" when interfered with. — 18m
3. Shows sympathy to other children, tries to help and comfort them — 21m

Age 2-3
6. Asks for help in doing things. — 2-0
5. Helps a little with household tasks, — 2-0
7. Says "I can't," "I don't know," or "You do it." — 2-6
8. Pays attention well — listens to others. — 2-6
9. Apologizes — says "I'm sorry" when he(she) does something wrong. — 2-6

Age 3-4
2. Tattles or tells on other children. — 3-0
10. Gives directions to other children. — 3-0

Self Help Scale - 10 items

Age 1-2
50. Lifts a cup to his(her) mouth and drinks. — 12m
41. Feeds self with a spoon. — 15m
47. Eats with a fork. — 18m
42. Eats with a spoon with little spilling. — 21m

Age 2-3
49. Opens door by turning knob and pulling. — 2-0
43. Washes and dries hands. — 2-6

Age 3-4
44. Toilet-trained for urine control and bowel movements. — 3-0, 2-6
48. Dresses and undresses without help, except for tying shoelaces. — 3-9, 3-6

Age 4-5
45. Buttons one or more buttons. — 4-3
46. Buttons a shirt, blouse, or coat, having all the buttons in the correct holes. — 5-0, 4-3

Gross Motor Scale - 10 items

Age 1-2
81. Walks without help. — 12m
83. Throws a ball while standing. — 15m
84. Runs. — 15m
89. Kicks a ball. — 18m
87. Walks up and down stairs alone. — 21m

Age 2-3
85. Runs smoothly, turning corners and making sudden stops. — 2-0
82. Jumps from steps with feet together. Or used to. — 2-3
88. Walks up and down stairs alone, one foot to a step, alternating feet. — 2-9

Age 3-4
86. Rides around on tricycle using pedals. — 3-0
90. Hops on one foot, at least two times, without support. — 3-6

Fine Motor Scale - 10 items

Age 1-2
121. Scribbles with crayon or pencil. Or used to. — 15m
128. Builds a tower of five or more blocks. — 21m

Age 2-3

129. Turns pages of children's book one page
at a time.   2-3, 21m
125. Attempts to cut with small scissors. Or cuts.   2-6

Age 3-4

124. Draws or copies a complete circle.   3-3
122. Cuts across paper with scissors from one
side to the other.   3-6

Age 4-5

123. Draws recognizable pictures.   4-3
126. Draws or copies a square that has four
good corners. (□).   4-3
127. Cuts with scissors, following a simple outline
or pattern.   4-3
130. Draws pictures of people that have at least
three parts, such as head, eyes, nose, mouth,
hair, body, arms, or legs.   4-6

Expressive Language Scale - 10 items

Age 1-2

164. Uses at least five words as names of
familiar objects   18m
170. Refers to his(her) things as "my" or "mine."   21m

Age 2-3

165. Uses at least one of the following words —
"me," "I," "he," "she," "you," "it."   2-0
167. Has a vocabulary of 20 or more words.   2-0
161. Talks in sentences at least four words long.   2-6, 2-3
163. Speaks clearly; is understandable most of the time.   2-6

Age 3-4

162. Gives reasons for things, using the
word "because...."   3-0
166. Asks questions beginning with "why,"
"when," or "how."   3-0
169. Talks about things that have happened in detail,
describing a series of events, for example,
"We went to..., and we.... Then we...."   3-3
168. Talks in long, complex sentences, ten words
or longer.   3-6

Language Comprehension Scale - 10 items

Age 1-2

209. Follows simple instructions.   18m
207. Follows two-part instructions, for example,
"Go to your room and bring me...."   21m

Age 2-3

206. Responds to simple questions appropriately
with "yes" or "no."   2-0
202. Uses the words "big" and "little."   2-6
203. Answers questions like "What do you do with
a...cracker?...a hat?...a glass?"   2-9

Age 3-4

205. Answers "If..., then?" questions such as
"If you get hurt, then what do you do?"   3-0
201. Identifies at least four colors by name correctly.   3-3
204. Answers the questions "What do you do with
your...eyes?...ears?"   3-6

Age 4-5

210. Uses —-est words like biggest, strongest, greatest.   4-3
208. When asked, "What is a...?" talks about the
group it belongs to, for example, "A horse?"
"Is an animal." "An orange?" "Is a fruit."   4-9

Letters Scale - 5 items

Age 4-5

251. Prints a few letters or numbers.   4-3
254. Prints first name (or at least four letters).   4-6

Age 5-6

252. Prints two or more simple words from a copy.   5-3

Age 6

255. Recognizes and names all the letters in the alphabet.   6-0
253. Reads four or more words.   6+

Numbers Scale- 5 items

Age 3-4

257. Talks about things, comparing one to another, for
example, says "This one is bigger, ...heavier, etc."   3-0
259. Tells when one object is longer or shorter
than another object.   3-6

Age 4-5

256. Counts ten or more objects   4-0

Age 5-6

258. Recites numbers in order from 1 to 30.   5-9

Age 6

260. Answers arithmetic questions such as "How
much is 2+2? 1+4? 3+6?"   6+

Problem Items - 30 items:

The items are grouped here to highlight their relevance to the child's vision and hearing, health, development, and adjustment. Some areas are covered by more than one item: motor incoordination—"clumsy" [2]; language symptoms [4]; immaturity [4]; attention-activity problems [3]; behavior problems [3]; and emotional problems [4]. Reported problems in various areas are to be compared to developmental scale results for the same area.

271. Seems to have trouble seeing.
272. Seems to have trouble hearing.

273. Health problems.
274. Growth, height, or weight problems.
275. Eating problems — eats poorly or too much, etc.
276. Bowel and bladder problems, toilet training.
277. Sleep problems.
278. Aches and pains; earaches, stomachaches, headaches, etc.
279. Energy problems; appears tired and sluggish.

280. Clumsy; walks or runs poorly, stumbles or falls (Age 2 and older.)
281. Clumsy in doing things with his/her hands.

282. Does not talk well for age.
283. Speech is difficult to understand (Age 3 and older.)
284. Stutters or stammers.
285. Does not seem to understand well; is slow to "catch on."

286. Immature; acts much younger than age.
287. Prefers to play with younger children.
288. Dependent, clingy, very upset about separating.
289. Passive; seldom shows initiative.

290. Does not pay attention; poor listener.
291. Can't sit still; may be hyperactive.
292. Disorganized; messy, careless, irresponsible.

293. Demanding; strong-willed.
294. Disobedient; does not mind well, resists.
295. Overly aggressive.

296. Timid, fearful, or worries a lot.
297. Unhappy; cries a lot or whines a lot.
298. Seldom plays with other children.
299. Lacks self-confidence; says "I'm dumb," etc.

300. Other? What?

ANSWER SHEET AND SCORING

The CDI answer sheet is a standard answer sheet that provides for YES-NO responses to the items in the CDI booklet. Instructions for scoring are given here and on the back of the CDI Profile sheet.

The left half of the answer sheet asks for identifying information including the child's name, sex, birth date and the date the CDI was completed. Below this is a Family Information section which asks for the name of the person completing the CDI, their relationship to the child, their occupation, and education. Finally, about any disabilities or special problems the child may have. The right half of the answer sheet is the item response section.

Instructions for Scoring

1. Review the left half of the answer sheet to be sure that it has been completed adequately. The child's birth date and date completed are necessary to determine the child's age. Educational level of the person completing the Inventory suggests their ability to read and understand the CDI instructions and items and to provide an accuarate report.

2. Review the item response side of the answer sheet to determine whether the parent has answered all of the developmental items. If they have not, this raises some question about their ability to follow the CDI instructions and about the accuracy of the results. Mark the unanswered items with a question mark (?). For the Problems items, number 271 to 300, parents are asked to mark only the YES items.

3. The score for each scale is the total number of items marked YES for the scale. For each scale, count the number of items marked YES, using the single scoring template. Record the score for each scale in the spaces at the top of the answer sheet. Then transfer these scores to the CDI Profile Sheet. For the Problems items, mark the numbers of those items answered YES on the answer sheet.

Accuracy of Parent Report

The confidence that can be placed in the CDI results depends on the confidence that can be placed in the reporter, whether it is the child's mother or father, or some other caregiver. Here are some questions to consider:

1. Did the person completing the Inventory understand the instructions and items? And were the instructions followed? The CDI instructions and items were written to be understandable to people with an eighth grade reading level. Parents who have not completed high school may not be able to read well enough to understand and complete the CDI accurately.

2. Does the person completing the Inventory have adequate knowledge of what the child is doing? Have they observed the child in daily situations recently over a period of time, so that they know what the child is doing?

3. Is there any reason to believe that this parent is exaggerating what their child knows and does? For example, is a three-year-old who is reported to be reading actually reading?

The answer sheet contains information that can help to answer these questions: First, did the person completing the Inventory follow the instructions and provide all of the information requested? Child Information, the date the CDI was completed, and Family Information?

Did the parent completing the Inventory finish high school? While results for parents with less than a high school education may be quite accurate, this guideline is intended as a caution or question. It should not be used to dismiss results from these parents automatically.

The best approach is to consider the parent's level of education before asking them to complete the CDI. If there is any reason to believe that they would have difficulty completing the CDI, or be intimidated or embarassed by their reading difficulties, then an alternative approach should be used. The child Development Review (CDR) is a parent interview alternative to completing the CDI. It includes items from the CDI. During the CDR interview the parent is asked to describe what their child is doing. Follow-up questions including the CDI items are used to obtain a complete picture of what the child is doing. Guidelines for the interpretation of how well the child is doing are similar to those used in interpreting the CDI.

Whatever the parent's level of education, if the answer sheet information is incomplete, or if item responses include omitted or double-answered items, some question should be raised about the parent's understanding of or attention to the CDI instructions; and therefore about the accuracy of results.

Some professionals are skeptical about the accuracy of parents' reports of their children's abilities. They expect parents to exaggerate, to commit a "leniency error" when reporting their child's skills. This does happen. However, in our experience, this is the exception, not the rule. To spot possible over-reporting, identify those children with CDI profiles suggesting development over 30 percent above age level in one or more areas. Keep an open mind about whether the child may be gifted or not. Talk with the parent more specifically about what the child is doing. Use your own observations and test results as other sources of information.

CHILD DEVELOPMENT INVENTORY PROFILE

The CDI Profile provides a picture of the child's present development. The CDI Profile sheet shown here includes space for identifying information at the top. Under the child's name, there is space for recording any special problems reported by the parent. In the center is the CDI Profile, which is for recording the results for the CDI scales. At the bottom, there is a Problems section, for recording any problems that are reported.

The Child Development Inventory Profile represents a child's scores on the CDI scales in relation to age norms. The Profile presents a concise picture of the child's present development, including strengths and weaknesses. The inventory scales and norms are represented in the columns. The name of each scale is indicated at the top and bottom of each column, starting with the Social Scale and ending with the General Development Scale. The numbers and points on each scale represent the mean number of items answered YES for children of different ages in the norm group. Age is represented on the left and right margins of the profile form. Age is in months for children under age two, and in years and months for children two and older. For example, on the Social Scale, for children age 18 months the mean score is 13; for age two years, six months the mean score is 30.

For a given child, the score on each scale is the number of items of that scale marked YES on the answer sheet by the child's parent. After the score for each scale is recorded in the appropriate space on the profile, the scores are plotted on the scales. Then the points are connected by lines to produce the CDI Profile for the child. Instructions for scoring the answer sheet and completing the CDI Profile are on the back of the profile sheet. The CDI Profile shown here is for a normally developing three-year-old child.

Child Development Inventory Profile

Name _____ Date Completed _____ Age **3-0**

Special Problems _____ Birthdate _____ Sex **M**

Columns (left to right): Social, Self Help, Gross Motor, Fine Motor, Expressive Language, Language Comprehension, Letters, Numbers, General Development

Vertical axis: Age in Years and Months

	S	SH	GM	FM	EL	LC	L	N	GD
Score	37	27	25	23	45	37	1	5	51

PROBLEMS

271. Seems to have trouble seeing.
272. Seems to have trouble hearing.
273. Health problems.
274. Growth, height, or weight problems.
275. Eating problems.
276. Bowel and bladder problems, toilet training.
277. Sleep problems
278. Aches and pains.

279. Energy problems; tired and sluggish.
280. Clumsy; walks or runs poorly (age 2 and older).
281. Clumsy doing things with hands.
282. Does not talk well for age.
283. Speech difficult to understand (age 3 and older).
284. Stutters or stammers.
285. Does not understand well.

286. Immature; acts much younger.
287. Prefers to play with younger children.
288. Dependent, clingy, very upset about separating.
289. Passive; seldom shows initiative.
290. Attention; poor listener.
291. Can't sit still; hyperactive?
292. Disorganized; messy, careless, irresponsible.

293. Demanding; strong-willed.
294. Disobedient;
295. Overly aggressive.
296. Timid, fearful, worries a lot.
297. Unhappy; cries or whines a lot.
298. Seldom plays with other children.
299. Lacks self-confidence.
300. Other problems.

19

INSTRUCTIONS

1. In the spaces at the top of the profile sheet, record the child's name, date completed, child's birth date, and sex. Next, any special problems or handicaps that are reported.

2. Determine the child's age by subtracting the child's birth date from the date the Inventory was completed. Drop the days after calculating the child's age, not before.

```
┌─────────────────────────────────────────────┐
│            AGE CALCULATION                   │
│                                              │
│                Year    Month    Day          │
│                                              │
│  Date Completed  ____    ____    ____         │
│                                              │
│  Birthdate       ____    ____    ____         │
│                                              │
│  Age             ____    ____    ____         │
│                                              │
└─────────────────────────────────────────────┘
```

3. Record the child's age in the upper right corner of the profile sheet. For children under age two, record the child's age in months. For children age two and older, record age in years and months.

4. Determine the score for each scale using the instructions in the manual and the CDI Scoring Template. Record the score for each scale in the spaces at the top of the answer sheet.

5. Child Development Inventory Profile: On the profile sheet, record the scores in the spaces at the bottom of each scale. Plot the score for each scale as a point at the corresponding number on the scale. If the score falls below the lowest number listed for the scale, plot the score just below the lowest number. Connect the points with lines to obtain the Child Development Inventory Profile.

6. Draw a line across the profile at the child's age level.

7. Draw Below Age Lines across the profile at age levels that are 25% and 30% below the child's age. Use the Percent Below Age guide to determine the ages at which these lines should be drawn.

8. Problems Items: At the bottom of the profile sheet, mark the numbers of those items that were anwered YES. Refer to item numbers 271-300 on the answer sheet.

*Age norms are based upon a sample of 568 children age one year to six years, three months.

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PERCENT BELOW AGE GUIDE

Age	-1.3 S.D. 20% below age	-1.5 S.D. 25% below age	-2 S.D. 30% below age
15	12	11	10.5
16	12.5	12	11
17	13.5	12.5	12
18	14	13.5	12.5
19	15	14	13
20	16	15	14
21	16.5	15.5	14.5
22	17.5	16.5	15
23	18	17	16
2-0	19	18	16.5
2-1	20	18	17.5
2-2	20	19	18
2-3	21	20	19
2-4	22	21	19
2-5	23	21	20
2-6	2-0	22	21
2-7	2-0	23	21
2-8	2-1	2-0	22
2-9	2-2	2-0	23
2-10	2-3	2-1	23
2-11	2-4	2-2	2-0
3-0	2-4	2-3	2-1
3-1	2-5	2-3	2-2
3-2	2-6	2-4	2-2
3-3	2-7	2-5	2-3
3-4	2-8	2-6	2-4
3-5	2-8	2-6	2-4
3-6	2-9	2-7	2-5
3-7	2-10	2-8	2-6
3-8	2-11	2-9	2-6
3-9	3-0	2-9	2-7
3-10	3-0	2-10	2-8
3-11	3-1	2-11	2-9
4-0	3-2	3-0	2-9
4-1	3-3	3-0	2-10
4-2	3-4	3-1	2-11
4-3	3-4	3-2	2-11
4-4	3-5	3-3	3-0
4-5	3-6	3-3	3-1
4-6	3-7	3-4	3-1
4-7	3-8	3-5	3-2
4-8	3-8	3-6	3-3
4-9	3-9	3-6	3-4
4-10	3-10	3-7	3-4
4-11	3-11	3-8	3-5
5-0	4-0	3-9	3-6
5-1	4-0	3-9	3-6
5-2	4-1	3-10	3-7
5-3	4-2	3-11	3-8
5-4	4-3	4-0	3-8
5-5	4-4	4-0	3-9
5-6	4-4	4-1	3-10
5-7	4-5	4-2	3-11
5-8	4-6	4-3	3-11
5-9	4-7	4-3	4-0
5-10	4-8	4-4	4-1
5-11	4-8	4-5	4-1
6-0	4-9	4-6	4-2

INTERPRETING CHILD DEVELOPMENT INVENTORY RESULTS

To interpret CDI results for a child, consider the following three items:

1 Child's special problems or disabilities

What, if anything, is reported here? How serious is the problem? Does the report suggest a major problem or handicap?

2 CDI Profile

Are the scores for all the scales within age expectations? Are one or more scores below the child's age level in the "delayed" or "borderline" range?

3 Problems items

Are any problems reported? What problems? How serious are they? How many problems are reported?

These three elements are considered individually and then together to determine the pattern of results and the problems and strengths they suggest.

CDI Profile Interpretation

Parents and professionals are usually concerned about a child who, by observation, does not "act his age" in regard to developmental skills. For example, parents of a three-year-old are concerned when their child is talking more like a two-year-old than a three-year-old. The purpose of the CDI is to more specifically identify and assess those children who appear to be developing slower than their age mates. For the CDI, a child's development is considered to be within age expectations if his or her scores on the developmental scales are at or above the mean scores for children who are thirty percent younger than the child. For a three-year-old (age 3-0) this would mean that the child's CDI scores were at or above the mean scores for children age 2-1. If any of the child's scores fell below the mean scores for children age 2-1, the CDI results for those scales are considered to be in the "developmentally delayed range." It is important to remember that "developmentally delayed range" is a description of CDI results in certain areas, not a diagnosis.

Guidelines for interpretation are drawn across the profile at critical age levels. First, a line is drawn across the profile at the child's age level. A second line is drawn across the profile at the age level which is 25 percent below the child's age. A third line is drawn at the age level that is 30 percent below the child's age. The below age lines provide boundaries for defining development within age expectations and for the identification of children who are developing below age expectations.

A child is likely developing below age expectations if any of the child's scores are lower than the 30 percent below age line, or any scores fall within the 25-30 percent below age range. The terms "developmentally delayed" and "borderline development," are used to designate development below age expectations. These terms are reference points for the convenience of the interpreter. They should not be interpreted as final diagnostic statements.

The thirty percent below age cutoff defines a broad range of normal. Among presumably normally developing children - "the norm group" - about two percent of children would be expected to score below the thirty percent below age cutoff. The thirty percent below age cutoff is equivalent to two Standard Deviations below the mean. (-2 S.D.) A twenty-five percent below age cutoff (-1.5 S.D.) was defined to help identify those children whose development was "Borderline" or "Mildly Delayed." This cutoff may be used to identify somewhat larger numbers of children who show lesser degrees of developmental delay. These children may also need early childhood/special education services. Table 5 shows Percent Below Age Cutoffs, together with their Standard Deviation Equivalents. Also, the percentages of children expected to fall below these cutoff points. Remember that these cutoffs are applied to each developmental scale, so the total percentage of children identified by using these cutoffs will be higher.

TABLE 5
CDI Percent Below Age Cutoffs

Percent Below Age	S.D. Equivalent	Percentage of Children Below Cutoff Score
-20 %	-1.3 S.D.	10 %
-25 %	-1.5 S.D	5 %
-30 %	-2.0 S.D.	2 %

On the back of the CDI Profile, you will find a Percent Below Age Guide, including ages with their 20, 25, and 30 percent below age cutoff levels. The original MCDI used 30 and 20 percent below age cutoffs which created a broader "Borderline Development Range" (20-30 percent below age) and a "Delayed Development Range" (greater than 30 percent below age). Users need to make thoughtful decisions about which cutoff to use in addition to the 30 percent cutoff. Program eligibility guidelines and existing resources are some of the factors to consider.

To interpret the CDI profile, first scan the profile, starting with the Social Scale. Are the results all within age expectations? Or do some of the scores fall below the 25 percent line or below the 30 percent line? If any scores fall below the 30 percent line, notice which scales these are. Notice if any scores fall within the 25-30 percent range. Identify those scales with scores that are within age expectations. Are they within age expectations, at age level, or somewhat or greatly above age level? The patterns that we have observed include: 1) general developmental delay on all scales suggesting

possible mental retardation, 2) specific delays or disabilities, such as a language or gross motor disability, 3) multiple delays or disabilities, 4) overall development within age expectations, and 5) advanced development, in specific areas such as language or generally.

Here, for example, is the CDI Profile of a three-and-one-half-year-old with speech and language problems.

When interpreting CDI results, it is critical to identify the child's strengths as well as problems. For this three-and-one-half year old, language development is clearly delayed as are letter and number skills. Social development is borderline, possibly due to language problems. However, this child's self help and gross motor skills are about at age level. Fine motor skills are low average, but within age expectations. The CDI Profile, the pattern of strengths and problems, is consistent with the parent's report of a speech problem and two problems items: "Does not talk well for age" and "Speech is difficult to understand." No health, sensory, or behavior problems are reported.

The General Development Scale is a measure of the child's overall development. It is highly age-discriminating. However, if the child's profile suggests areas of delay and areas of normal functioning, it is meaningless. For such children, just use the results of the single area scales.

Low scores on certain scales - Expressive Language and Language Comprehension and, for older children, Letters and Numbers - are doubly important. This is because they indicate both current developmental problems and possible future educational problems.

Sometimes children age four and older obtain delayed range scores on certain scales because these scales include relatively few items measuring development in the three- to six-year age range. Scales with limited numbers of items in the three- to six-year age range include Social, Gross Motor, Expressive Language, and Language Comprehension. Each of these scales has an (*) at a mean score on the scale at about the three year, three month level. If a child age four or older obtains this score or exceeds it and has no problems reported, the child is probably developing well enough, even though the score may fall within the delayed range.

Problems Items - Frequencies

Finally, the parent's report of any symptoms or problems is used to complement the report of the child's developmental skills. Consider various symptoms and problems that are reported in relation to the developmental scale results, for example, trouble hearing and language scale results, clumsiness and motor scale results, behavior problems and social scale results. Some of these problems are more important than others due to their implications for both development and education. For example, "slow to 'catch on'; does not understand well" is related to poor kindergarten performance.

Table 6 shows the frequency, by age and sex, for each of the problems items. These results provide a picture of which problems are least frequently occurring - low energy, vision, lacks self-confidence - and which are most common - demanding; strong-willed. The report of children as "demanding: strong-willed" is so common (50 percent) that it should be viewed as an issue or challenge for parents rather than presumed to be a problem.

Some problems are more frequent at older ages, being absent or infrequent for one- to three-year-olds. Examples are: poor attention, stuttering, passive, disorganized, timid-fearful.

While five-year-olds generally have less frequently reported problems than three- to five-year-olds, this may be a consequence of the fact that parents of five-year-olds were asked to complete the problems questionnaire as an option, while parents of children younger than five were all asked to complete it. Under these conditions, the reports for five-year-olds probably underestimate problem frequencies for this age group.

Table 6
Problems Items Frequency
by Age and Sex in Percentages

Item	Age	1-2	2-3	3-4	4-5	5-6
271.	M	0	0	0	2.0	0
Trouble	F	0	0	0	0	2.5
seeing	T	0	0	0	.9	1.3
272.	M	0	2.0	2.2	2.0	1.4
Trouble	F	0	0	3.5	1.9	0
hearing	T	0	1.0	2.9	1.9	.6
273.	M	2.0	2.0	8.8	10.6	4.4
Health	F	6.4	6.5	3.5	0	2.5
problems	T	3.8	4.2	5.8	5.1	3.3

Child Development Inventory Profile

1 Name _____ Date Completed _____ Age **3-6**

Special Problems **SPEECH** _____ Birthdate _____ Sex **M**

2 PROFILE

Columns: Social (S), Self Help (SH), Gross Motor (GM), Fine Motor (FM), Expressive Language (EL), Language Comprehension (LC), Letters (L), Numbers (N), General Development (GD)

Age in Years and Months scale: 6-0, 5-9, 5-6, 5-3, 5-0, 4-9, 4-6, 4-3, 4-0, 3-9, 3-6, 3-3, 3-0, 2-9, 2-6, 2-3, 2-0, 23, 22, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, <12

Score ____ ____ ____ ____ ____ ____ ____ ____ ____

3 PROBLEMS

- 271. Seems to have trouble seeing.
- 272. Seems to have trouble hearing.
- 273. Health problems.
- 274. Growth, height, or weight problems.
- 275. Eating problems.
- 276. Bowel and bladder problems, toilet training.
- 277. Sleep problems
- 278. Aches and pains.
- 279. Energy problems; tired and sluggish.
- 280. Clumsy; walks or runs poorly (age 2 and older).
- 281. Clumsy doing things with hands.
- 282. Does not talk well for age.
- 283. Speech difficult to understand (age 3 and older).
- 284. Stutters or stammers.
- 285. Does not understand well.
- 286. Immature; acts much younger.
- 287. Prefers to play with younger children.
- 288. Dependent, clingy, very upset about separating.
- 289. Passive; seldom shows initiative.
- 290. Attention; poor listener.
- 291. Can't sit still; hyperactive?
- 292. Disorganized; messy, careless, irresponsible.
- 293. Demanding; strong-willed.
- 294. Disobedient;
- 295. Overly aggressive.
- 296. Timid, fearful, worries a lot.
- 297. Unhappy; cries or whines a lot.
- 298. Seldom plays with other children.
- 299. Lacks self-confidence.
- 300. Other problems.

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Item	Age	1-2	2-3	3-4	4-5	5-6
274.	M	10.4	0	4.4	8.4	2.9
Growth	F	0	6.5	7.0	6.1	6.2
Problems	T	6.3	3.1	5.8	7.2	4.6
275.	M	14.5	6.2	8.8	14.8	4.4
Eating	F	0	8.7	17.5	10.1	5.0
Problems	T	8.8	7.4	13.7	12.4	4.6
276.	M	2.0	4.1	13.3	10.6	4.4
Bowel and	F	3.2	6.5	8.7	4.0	3.7
Bladder	T	2.5	5.3	10.7	7.2	4.0
277.	M	6.2	4.1	2.2	2.0	1.4
Sleep	F	0	17.3	3.5	0	2.5
Problems	T	3.8	10.6	2.9	.9	1.9
278.	M	10.4	14.5	13.3	14.8	7.3
Aches	F	9.6	8.7	12.2	8.0	3.7
and Pains	T	10.1	11.7	12.7	11.3	5.3
279.	M	0	0	6.6	0	0
Energy	F	0	0	0	0	0
problems	T	0	0	2.9	0	0
280.	M	0	2.0	4.4	4.1	1.4
Clumsy	F	0	0	1.7	1.9	0
	T	0	1.0	2.9	2.9	0.6
281.	M	0	0	2.2	10.5	2.9
Clumsy	F	0	0	1.7	4.0	2.5
with Hands	T	0	0	1.9	7.1	2.6
282.	M	6.2	18.7	11.1	14.8	7.3
Not talk	F	6.4	8.7	1.7	4.0	3.7
well	T	6.3	13.8	5.8	9.2	5.3
283.	M	0	8.3	20.0	10.6	5.8
Speech	F	0	0	5.2	6.1	3.7
	T	0	4.2	11.7	8.3	4.6
284.	M	0	2.0	4.4	16.6	
Stutters,	F	0	0	5.2	20.0	No
Stammers	T	0	1.0	4.9	18.3	Data

Item	Age	1-2	2-3	3-4	4-5	5-6
285.	M	0	2.0	4.4	8.4	2.9
Not	F	0	0	3.5	1.9	0
understand	T	0	1.0	3.9	5.0	1.3
286.	M	0	0	2.2	4.2	1.4
Immature	F	0	0	1.7	1.9	1.2
	T	0	0	1.9	3.0	1.2
287. Prefers to play with younger children				No Data		
288.	M	10.4	8.3	6.6	6.3	2.9
Dependent	F	0	8.7	5.2	2.0	3.7
	T	6.3	8.5	5.8	4.1	3.3
289.	M	0	2.0	0	6.3	4.4
Passive	F	0	0	1.7	3.9	0
	T	0	1.0	.9	5.0	2.0
290.	M	0	4.1	11.1	8.4	5.8
Does not	F	0	2.1	3.5	1.9	1.2
pay attention	T	0	3.1	6.8	5.0	3.3
291.	M	6.2	6.2	8.8	16.9	5.8
Can't	F	0	4.3	1.7	1.9	2.5
sit still	T	3.8	5.3	4.9	9.2	4.0
292.	M	0	4.1	8.8	16.6	
Disorganized	F	0	4.3	7.0	0	No
	T	0	4.2	7.8	8.1	Data
293.	M	25.0	39.5	40.0	66.6	
Demanding	F	41.9	32.6	31.5	60.0	No
	T	31.6	36.1	35.2	63.2	Data
294.	M	6.2	14.5	8.8	8.4	1.4
Disobedient	F	0	6.5	7.0	2.0	5.0
	T	3.8	10.6	7.8	5.1	3.3
295.	M	4.1	8.3	4.4	31.8	13.2
Overly	F	3.2	4.3	3.5	22.4	7.5
agressive	T	3.8	6.3	3.9	27.0	10.1

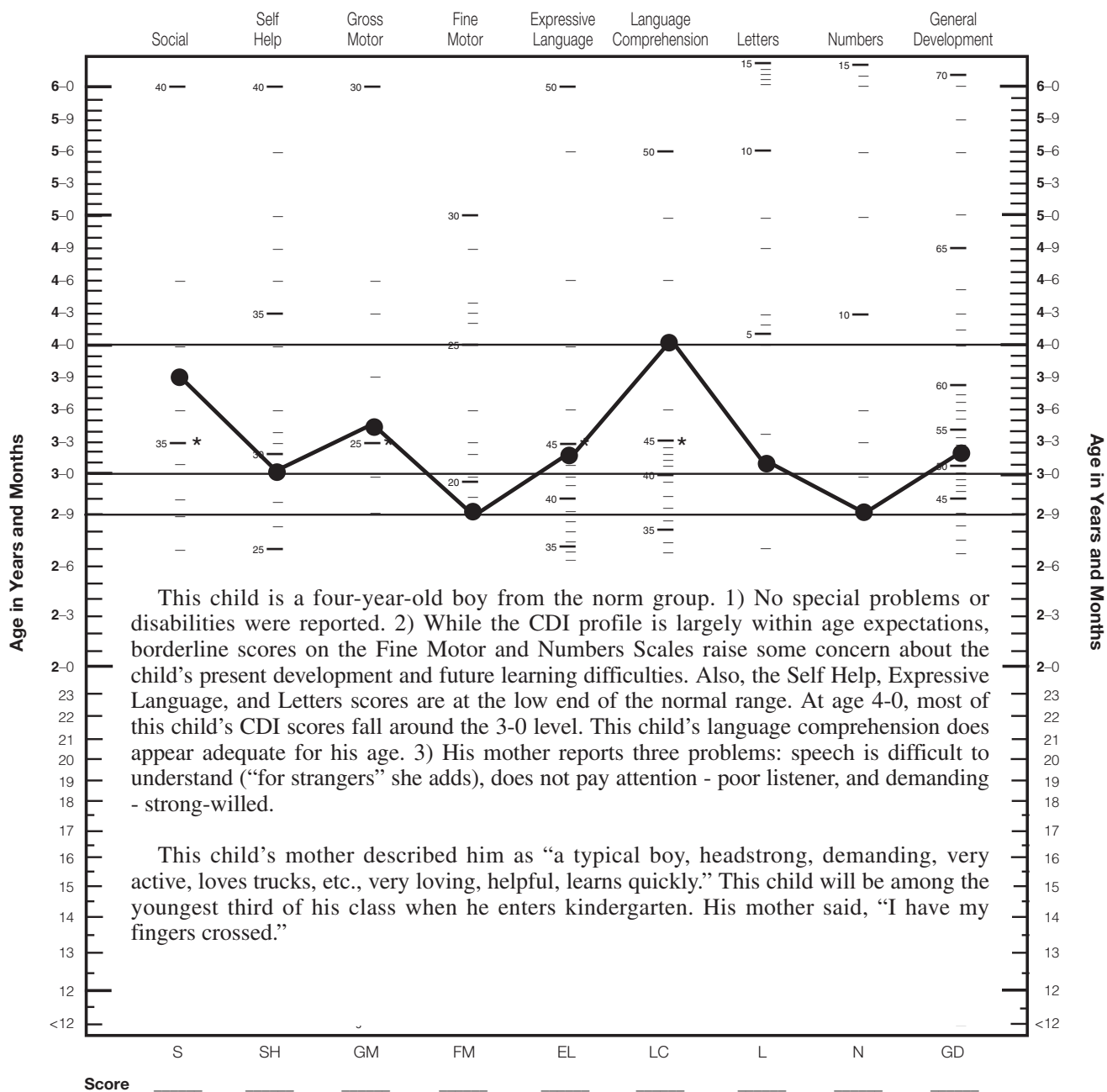| Item	Age	1-2	2-3	3-4	4-5	5-6
296.	M	0	0	4.4	6.3	2.9
Timid,	F	0	0	1.7	0	2.5
fearful	T	0	0	2.9	3.0	2.6
297.	M	0	4.1	8.8	8.4	0
Unhappy,	F	0	0	3.5	1.9	1.2
cries	T	0	2.1	5.8	5.0	.6
298.	M	2.0	0	6.6	8.4	1.4
Seldom plays	F	0	2.1	3.5	0	1.2
with others	T	1.2	1.0	4.9	4.1	1.2
299.	M	0	0	0	0	
Lacks self-	F	0	0	1.7	0	No
confidence	T	0	0	.9	0	Data
300.	M	0	0	2.2	0	
Other	F	0	0	1.7	0	No
	T	0	0	1.9	0	Data

The CDI results provide you with an array of information, including (1) Special Problems, (2) the CDI Profile, and (3) the Problems items. There is no simple formula for interpreting these results. However, your familiarity with the CDI manual, with young children, and with the child in question should provide a sound basis for making good use of the CDI results. Also, the child studies that follow should help.

CHILD STUDIES

The children described here include some with mild developmental problems, some with major developmental disabilities, others with no developmental problems. Some children are from the norm group, others were being assessed for some developmental disability, others are in early childhood/special education programs. Some have developmental problems, others behavioral problems, others physical problems, or a combination of these problems. These children are described in terms of their CDI results and other available information.

Child Development Inventory Profile

Name _____ Date Completed _____ Age **4-0**

Special Problems _____ Birthdate _____ Sex **M**

	Social	Self Help	Gross Motor	Fine Motor	Expressive Language	Language Comprehension	Letters	Numbers	General Development

Age in Years and Months (left and right axis)

6–0 · 5–9 · 5–6 · 5–3 · 5–0 · 4–9 · 4–6 · 4–3 · 4–0 · 3–9 · 3–6 · 3–3 · 3–0 · 2–9 · 2–6 · 2–3 · 2–0 · 23 · 22 · 21 · 20 · 19 · 18 · 17 · 16 · 15 · 14 · 13 · 12 · <12

(Scale values marked on chart: Social 40, 35, 35; Self Help 40, 35, 30, 25; Gross Motor 30, 25; Fine Motor 30, 25, 20; Expressive Language 50, 45, 40, 35; Language Comprehension 50, 45, 40, 35; Letters 15, 10, 5; Numbers 15, 10; General Development 70, 65, 60, 55, 45)

    This child is a four-year-old boy from the norm group. 1) No special problems or disabilities were reported. 2) While the CDI profile is largely within age expectations, borderline scores on the Fine Motor and Numbers Scales raise some concern about the child's present development and future learning difficulties. Also, the Self Help, Expressive Language, and Letters scores are at the low end of the normal range. At age 4-0, most of this child's CDI scores fall around the 3-0 level. This child's language comprehension does appear adequate for his age. 3) His mother reports three problems: speech is difficult to understand ("for strangers" she adds), does not pay attention - poor listener, and demanding - strong-willed.

    This child's mother described him as "a typical boy, headstrong, demanding, very active, loves trucks, etc., very loving, helpful, learns quickly." This child will be among the youngest third of his class when he enters kindergarten. His mother said, "I have my fingers crossed."
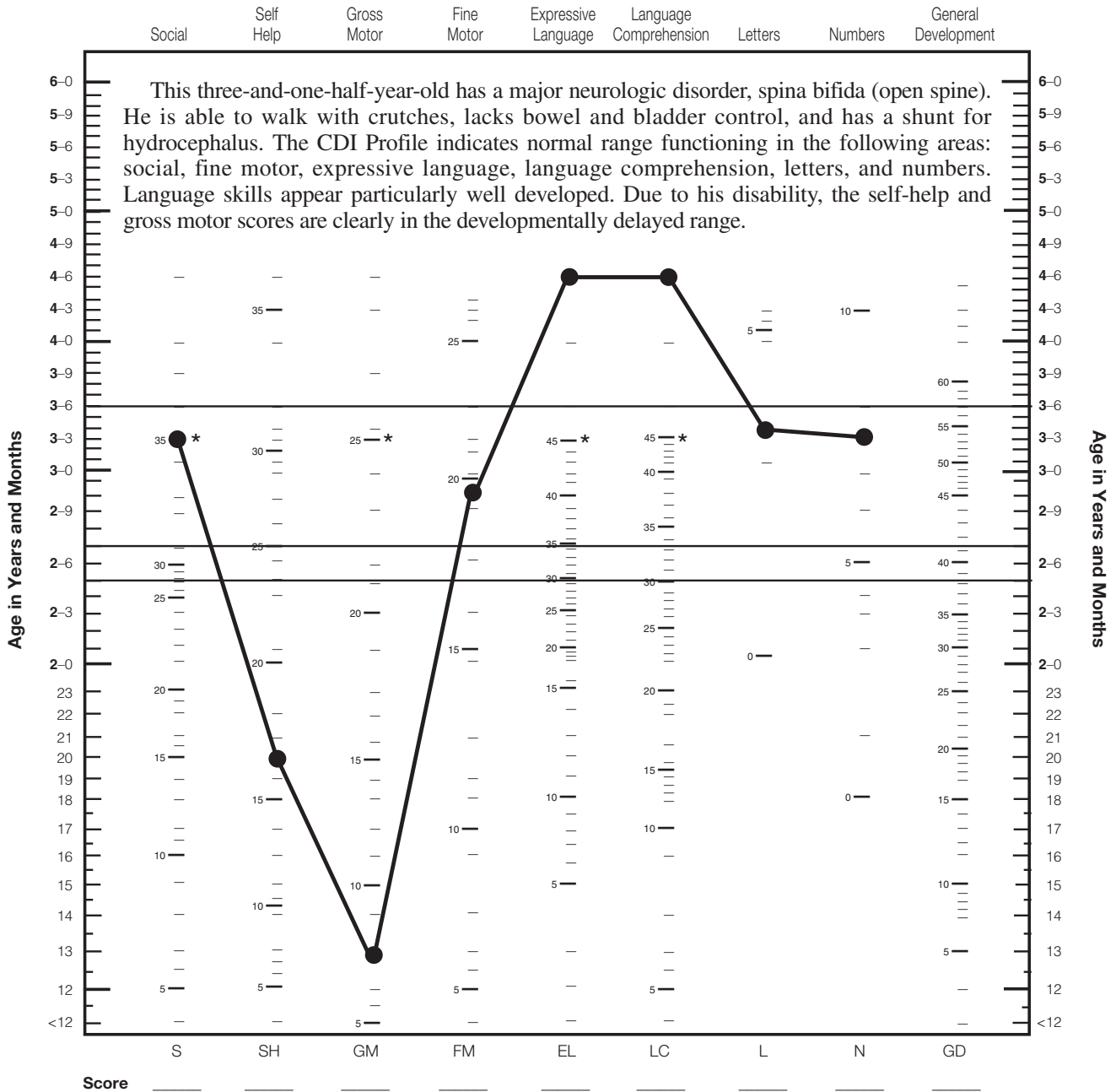
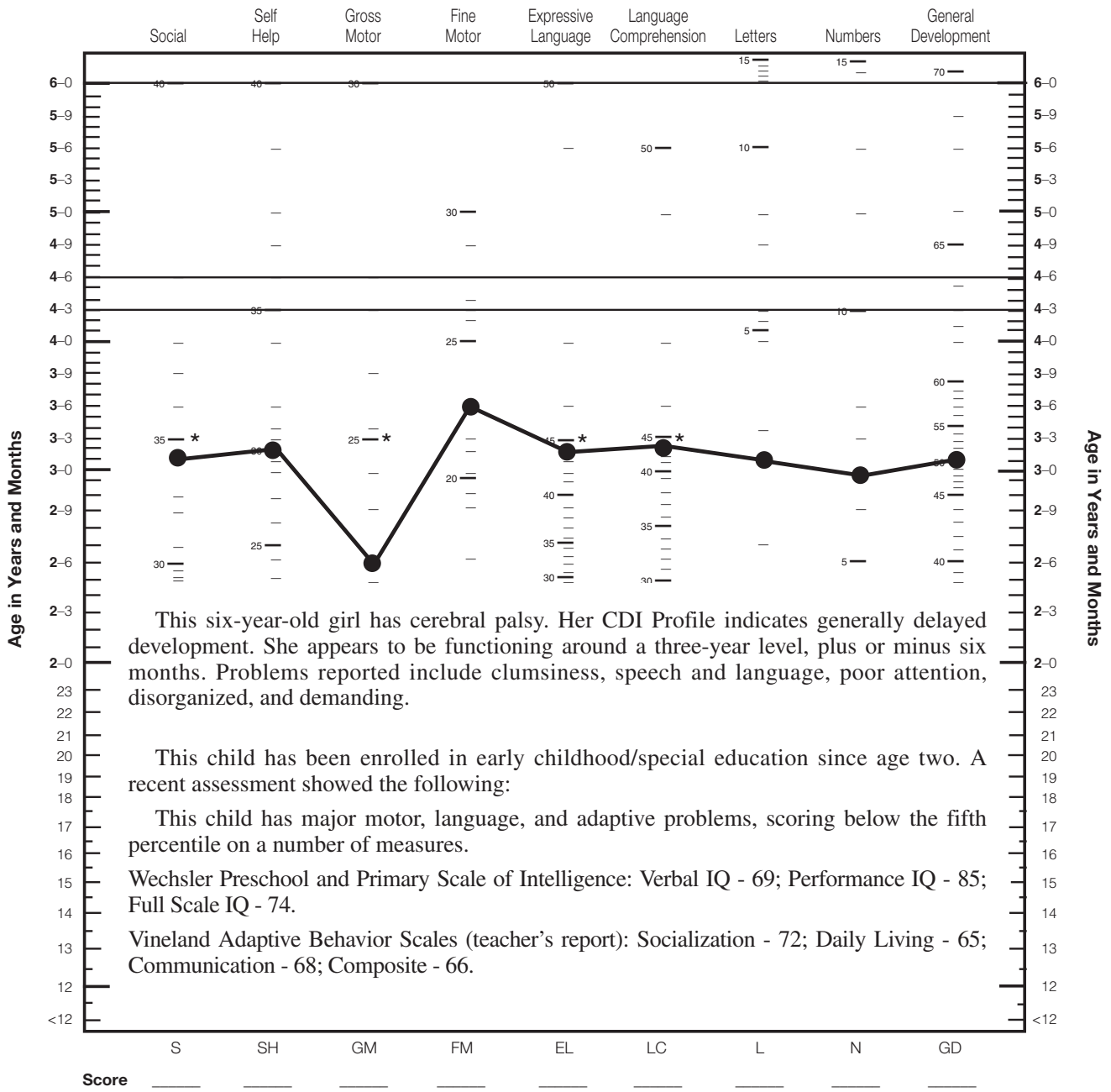|	S	SH	GM	FM	EL	LC	L	N	GD
Score	___	___	___	___	___	___	___	___	___

PROBLEMS

271. Seems to have trouble seeing.	279. Energy problems; tired and sluggish.	286. Immature; acts much younger.	~~293.~~ Demanding; strong-willed.
272. Seems to have trouble hearing.	280. Clumsy; walks or runs poorly (age 2 and older).	287. Prefers to play with younger children.	294. Disobedient;
273. Health problems.	281. Clumsy doing things with hands.	288. Dependent, clingy, very upset about separating.	295. Overly aggressive.
274. Growth, height, or weight problems.	282. Does not talk well for age.	289. Passive; seldom shows initiative.	296. Timid, fearful, worries a lot.
275. Eating problems.	~~283.~~ Speech difficult to understand (age 3 and older).	~~290.~~ Attention; poor listener.	297. Unhappy; cries or whines a lot.
276. Bowel and bladder problems, toilet training.	284. Stutters or stammers.	291. Can't sit still; hyperactive?	298. Seldom plays with other children.
277. Sleep problems	285. Does not understand well.	292. Disorganized; messy, careless, irresponsible.	299. Lacks self-confidence.
278. Aches and pains.			300. Other problems.

Child Development Inventory Profile

Name _____ Date Completed _____ Age **3-6**

Special Problems **SPINA BIFIDA** _____ Birthdate _____ Sex **M**

	Social	Self Help	Gross Motor	Fine Motor	Expressive Language	Language Comprehension	Letters	Numbers	General Development

This three-and-one-half-year-old has a major neurologic disorder, spina bifida (open spine). He is able to walk with crutches, lacks bowel and bladder control, and has a shunt for hydrocephalus. The CDI Profile indicates normal range functioning in the following areas: social, fine motor, expressive language, language comprehension, letters, and numbers. Language skills appear particularly well developed. Due to his disability, the self-help and gross motor scores are clearly in the developmentally delayed range.

Age in Years and Months

Score ____ ____ ____ ____ ____ ____ ____ ____ ____

S SH GM FM EL LC L N GD

PROBLEMS

271. Seems to have trouble seeing.
272. Seems to have trouble hearing.
273. Health problems.
274. Growth, height, or weight problems.
275. Eating problems.
276. Bowel and bladder problems, toilet training.
277. Sleep problems
278. Aches and pains.

279. Energy problems; tired and sluggish.
280. Clumsy; walks or runs poorly (age 2 and older).
281. Clumsy doing things with hands.
282. Does not talk well for age.
283. Speech difficult to understand (age 3 and older).
284. Stutters or stammers.
285. Does not understand well.

286. Immature; acts much younger.
287. Prefers to play with younger children.
288. Dependent, clingy, very upset about separating.
289. Passive; seldom shows initiative.
290. Attention; poor listener.
291. Can't sit still; hyperactive?
292. Disorganized; messy, careless, irresponsible.

293. Demanding; strong-willed.
294. Disobedient;
295. Overly aggressive.
296. Timid, fearful, worries a lot.
297. Unhappy; cries or whines a lot.
298. Seldom plays with other children.
299. Lacks self-confidence.
300. Other problems.

Child Development Inventory Profile

Name _____ Date Completed _____ Age **6-0**

Special Problems **CEREBRAL PALSY** _____ Birthdate _____ Sex **F**

	Social	Self Help	Gross Motor	Fine Motor	Expressive Language	Language Comprehension	Letters	Numbers	General Development

Age in Years and Months (left and right axis): 6-0, 5-9, 5-6, 5-3, 5-0, 4-9, 4-6, 4-3, 4-0, 3-9, 3-6, 3-3, 3-0, 2-9, 2-6, 2-3, 2-0, 23, 22, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, <12

Column labels (bottom): S   SH   GM   FM   EL   LC   L   N   GD

Score ____ ____ ____ ____ ____ ____ ____ ____ ____

This six-year-old girl has cerebral palsy. Her CDI Profile indicates generally delayed development. She appears to be functioning around a three-year level, plus or minus six months. Problems reported include clumsiness, speech and language, poor attention, disorganized, and demanding.

This child has been enrolled in early childhood/special education since age two. A recent assessment showed the following:

This child has major motor, language, and adaptive problems, scoring below the fifth percentile on a number of measures.

Wechsler Preschool and Primary Scale of Intelligence: Verbal IQ - 69; Performance IQ - 85; Full Scale IQ - 74.

Vineland Adaptive Behavior Scales (teacher's report): Socialization - 72; Daily Living - 65; Communication - 68; Composite - 66.

PROBLEMS

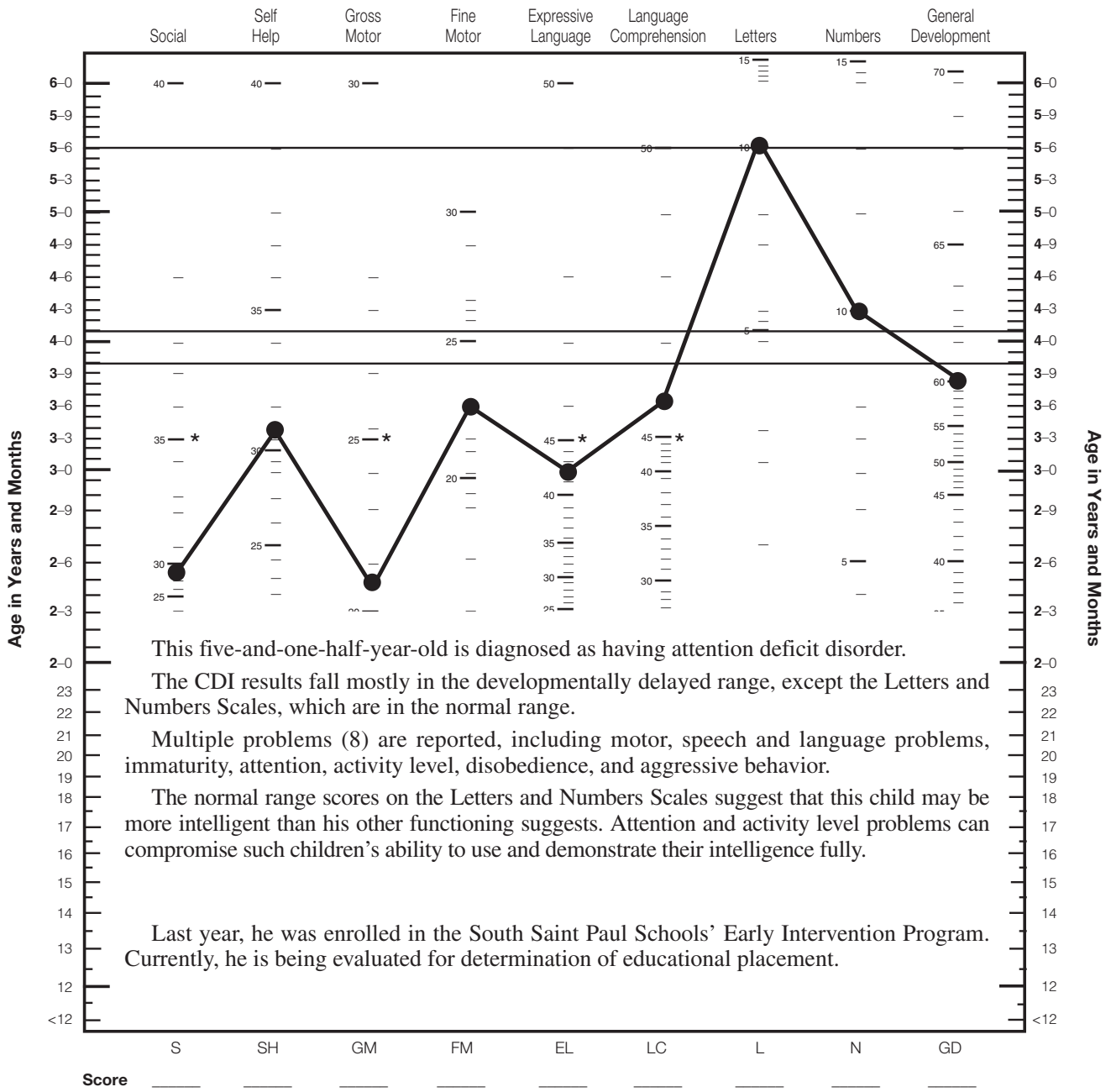271. Seems to have trouble seeing.
272. Seems to have trouble hearing.
273. Health problems.
274. Growth, height, or weight problems.
275. Eating problems.
276. Bowel and bladder problems, toilet training.
277. Sleep problems
278. Aches and pains.

279. Energy problems; tired and sluggish.
280. Clumsy; walks or runs poorly (age 2 and older).
281. Clumsy doing things with hands.
282. Does not talk well for age.
283. Speech difficult to understand (age 3 and older).
284. Stutters or stammers.
285. Does not understand well.

286. Immature; acts much younger.
287. Prefers to play with younger children.
288. Dependent, clingy, very upset about separating.
289. Passive; seldom shows initiative.
290. Attention; poor listener.
291. Can't sit still; hyperactive?
292. Disorganized; messy, careless, irresponsible.

293. Demanding; strong-willed.
294. Disobedient;
295. Overly aggressive.
296. Timid, fearful, worries a lot.
297. Unhappy; cries or whines a lot.
298. Seldom plays with other children.
299. Lacks self-confidence.
300. Other problems.

Child Development Inventory Profile

Name _____ Date Completed _____ Age **5-6**

Special Problems __**ATTENTION DEFICIT DISORDER**__ Birthdate _____ Sex **M**

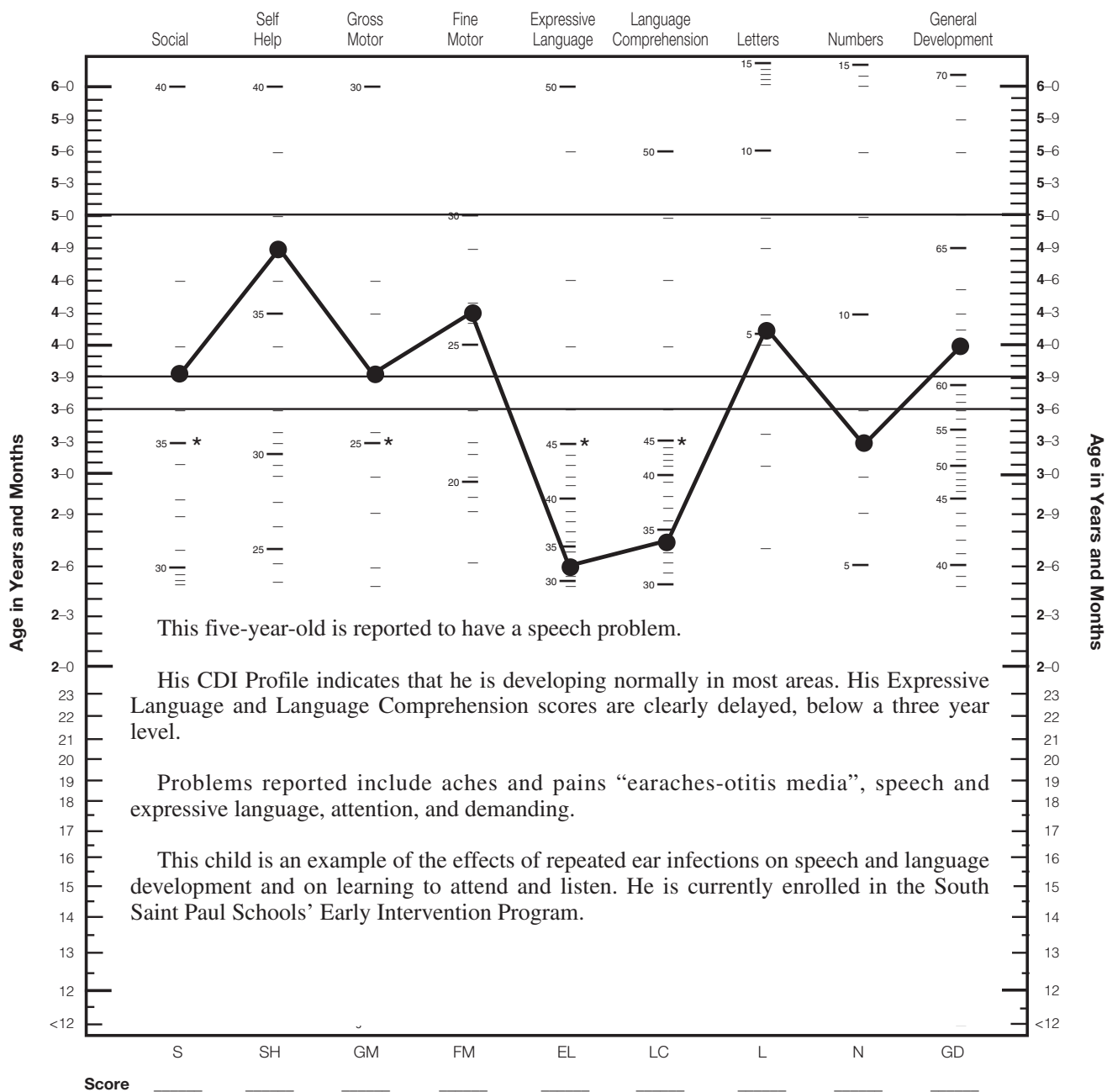|	Social	Self Help	Gross Motor	Fine Motor	Expressive Language	Language Comprehension	Letters	Numbers	General Development

Age in Years and Months

This five-and-one-half-year-old is diagnosed as having attention deficit disorder.

The CDI results fall mostly in the developmentally delayed range, except the Letters and Numbers Scales, which are in the normal range.

Multiple problems (8) are reported, including motor, speech and language problems, immaturity, attention, activity level, disobedience, and aggressive behavior.

The normal range scores on the Letters and Numbers Scales suggest that this child may be more intelligent than his other functioning suggests. Attention and activity level problems can compromise such children's ability to use and demonstrate their intelligence fully.

Last year, he was enrolled in the South Saint Paul Schools' Early Intervention Program. Currently, he is being evaluated for determination of educational placement.

S	SH	GM	FM	EL	LC	L	N	GD

Score ____ ____ ____ ____ ____ ____ ____ ____ ____

PROBLEMS

271. Seems to have trouble seeing.	279. Energy problems; tired and sluggish.	286. Immature; acts much younger.	293. Demanding; strong-willed.
272. Seems to have trouble hearing.	280. Clumsy; walks or runs poorly (age 2 and older).	287. Prefers to play with younger children.	294. Disobedient;
273. Health problems.	281. Clumsy doing things with hands.	288. Dependent, clingy, very upset about separating.	295. Overly aggressive.
274. Growth, height, or weight problems.	282. Does not talk well for age.	289. Passive; seldom shows initiative.	296. Timid, fearful, worries a lot.
275. Eating problems.	283. Speech difficult to understand (age 3 and older).	290. Attention; poor listener.	297. Unhappy; cries or whines a lot.
276. Bowel and bladder problems, toilet training.	284. Stutters or stammers.	291. Can't sit still; hyperactive?	298. Seldom plays with other children.
277. Sleep problems	285. Does not understand well.	292. Disorganized; messy, careless, irresponsible.	299. Lacks self-confidence.
278. Aches and pains.			300. Other problems.

29

Child Development Inventory Profile

Name _____ Date Completed _____ Age **5-0**

Special Problems **SPEECH** _____ Birthdate _____ Sex **M**

	Social	Self Help	Gross Motor	Fine Motor	Expressive Language	Language Comprehension	Letters	Numbers	General Development

Age in Years and Months

6–0 — 40 — 40 — 30 — — 50 — — 15 — 15 — 70 — 6–0

5–9 — 5–9

5–6 — — — 50 10 — — 5–6

5–3 — 5–3

5–0 — 30 — 5–0

4–9 — — 65 — 4–9

4–6 — 4–6

4–3 — 35 — 25 — 5 — 10 — 4–3

4–0 — 25 — — — — 4–0

3–9 — — — 60 — 3–9

3–6 — 55 — 3–6

3–3 — 35 * — 25 * — 45 * — 45 * — 50 — 3–3

3–0 — 30 — 20 — 40 — 45 — 3–0

2–9 — — 35 — 2–9

2–6 — 30 — 25 — 35 — 30 — 5 — 40 — 2–6

2–3 — 2–3

This five-year-old is reported to have a speech problem.

His CDI Profile indicates that he is developing normally in most areas. His Expressive Language and Language Comprehension scores are clearly delayed, below a three year level.

2–0 — 2–0
23 — 23
22 — 22
21 — 21
20 — Problems reported include aches and pains "earaches-otitis media", speech and — 20
19 — expressive language, attention, and demanding. — 19
18 — 18
17 — 17
16 — This child is an example of the effects of repeated ear infections on speech and language — 16
15 — development and on learning to attend and listen. He is currently enrolled in the South — 15
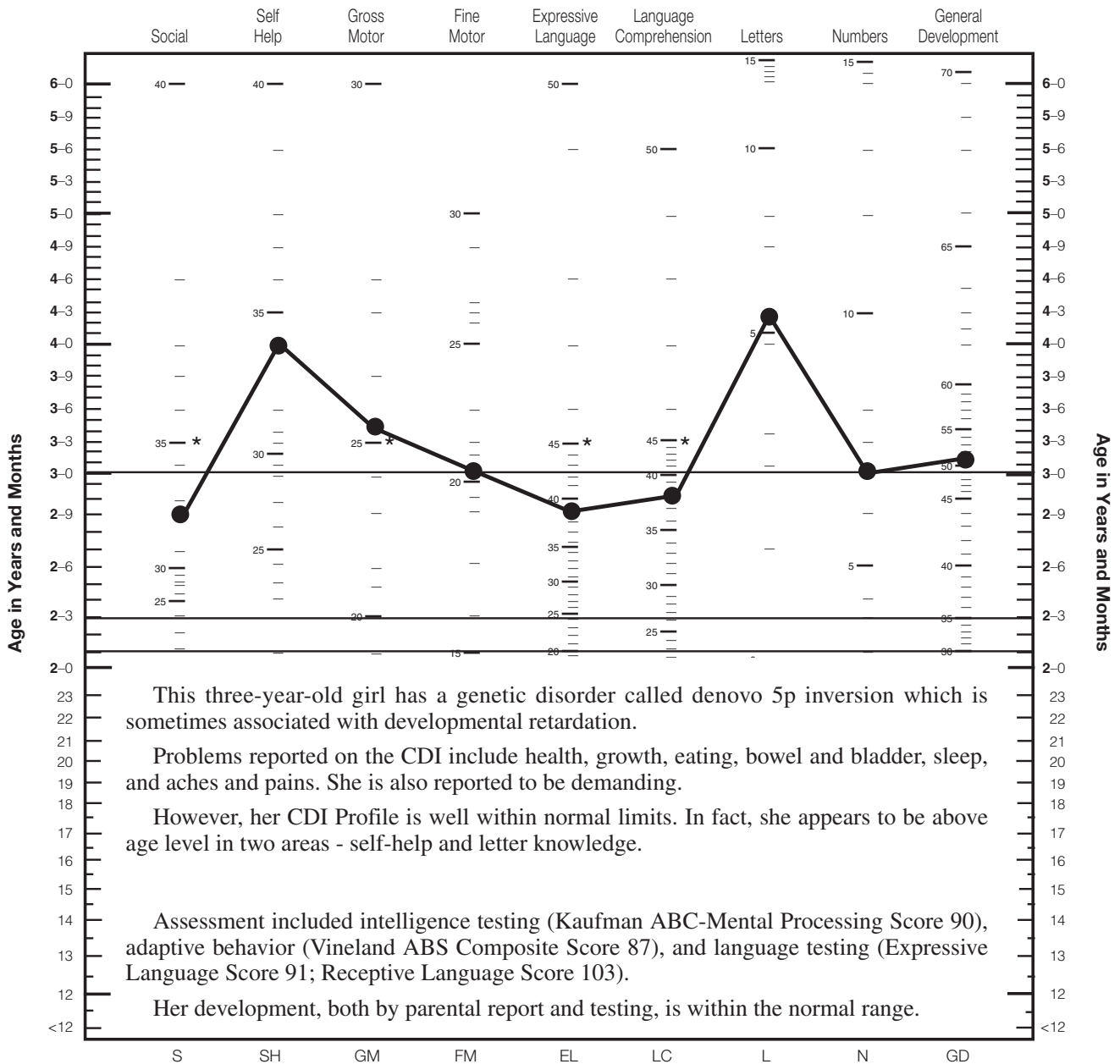14 — Saint Paul Schools' Early Intervention Program. — 14
13 — 13
12 — 12
<12 — <12

S	SH	GM	FM	EL	LC	L	N	GD

Score _____ _____ _____ _____ _____ _____ _____ _____ _____

PROBLEMS

271. Seems to have trouble seeing.
272. Seems to have trouble hearing.
273. Health problems.
274. Growth, height, or weight problems.
275. Eating problems.
276. Bowel and bladder problems, toilet training.
277. Sleep problems.
278. Aches and pains.
279. Energy problems; tired and sluggish.
280. Clumsy; walks or runs poorly (age 2 and older).
281. Clumsy doing things with hands.
282. Does not talk well for age.
283. Speech difficult to understand (age 3 and older).
284. Stutters or stammers.
285. Does not understand well.
286. Immature; acts much younger.
287. Prefers to play with younger children.
288. Dependent, clingy, very upset about separating.
289. Passive; seldom shows initiative.
290. Attention; poor listener.
291. Can't sit still; hyperactive?
292. Disorganized; messy, careless, irresponsible.
293. Demanding; strong-willed.
294. Disobedient;
295. Overly aggressive.
296. Timid, fearful, worries a lot.
297. Unhappy; cries or whines a lot.
298. Seldom plays with other children.
299. Lacks self-confidence.
300. Other problems.

Child Development Inventory Profile

Name _____ Date Completed _____ Age **3-0**

Special Problems **HEALTH** _____ Birthdate _____ Sex **F**

	Social	Self Help	Gross Motor	Fine Motor	Expressive Language	Language Comprehension	Letters	Numbers	General Development

Age in Years and Months

Left axis scale: 6-0, 5-9, 5-6, 5-3, 5-0, 4-9, 4-6, 4-3, 4-0, 3-9, 3-6, 3-3, 3-0, 2-9, 2-6, 2-3, 2-0, 23, 22, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, <12

Social: 40, 35, 30, 25 (plotted point ~2-9, value 35 *)
Self Help: 40, 35, 30, 25 (plotted ~4-0)
Gross Motor: 30, 25, 20 (plotted ~3-4, 25 *)
Fine Motor: 30, 25, 20 (plotted ~3-0)
Expressive Language: 50, 50, 45, 40, 35, 30, 25, 20 (plotted ~2-9, 45 *)
Language Comprehension: 50, 45, 40, 35, 30, 25 (plotted ~2-10, 45 *)
Letters: 15, 10, 5 (plotted ~4-3)
Numbers: 15, 10, 5 (plotted ~3-0)
General Development: 70, 65, 60, 55, 50, 45, 40, 35, 30 (plotted ~3-2)

This three-year-old girl has a genetic disorder called denovo 5p inversion which is sometimes associated with developmental retardation.

Problems reported on the CDI include health, growth, eating, bowel and bladder, sleep, and aches and pains. She is also reported to be demanding.

However, her CDI Profile is well within normal limits. In fact, she appears to be above age level in two areas - self-help and letter knowledge.

Assessment included intelligence testing (Kaufman ABC-Mental Processing Score 90), adaptive behavior (Vineland ABS Composite Score 87), and language testing (Expressive Language Score 91; Receptive Language Score 103).

Her development, both by parental report and testing, is within the normal range.
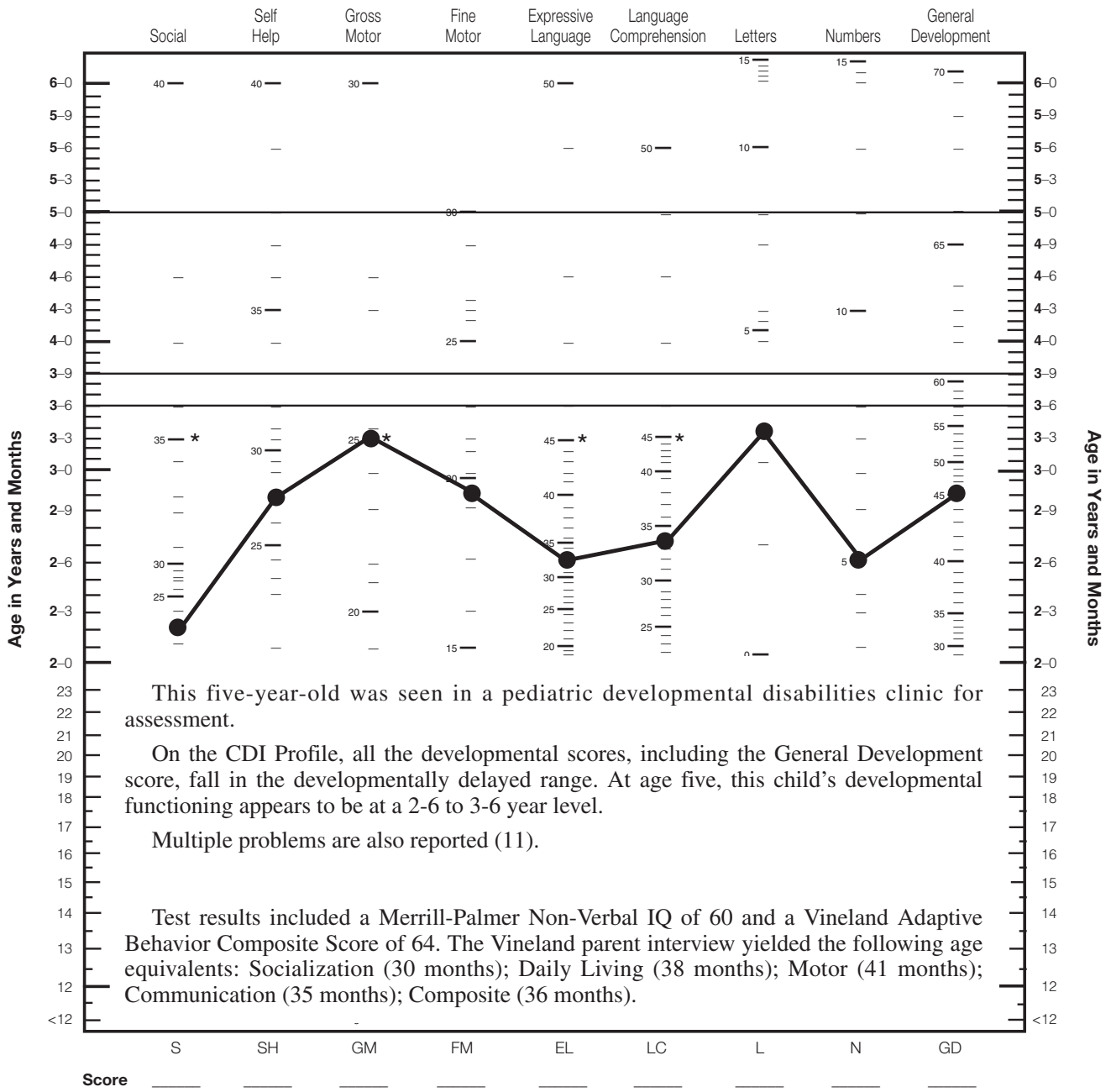
S	SH	GM	FM	EL	LC	L	N	GD

Score ____ ____ ____ ____ ____ ____ ____ ____ ____

PROBLEMS

271. Seems to have trouble seeing.	279. Energy problems; tired and sluggish.	286. Immature; acts much younger.
272. Seems to have trouble hearing.	280. Clumsy; walks or runs poorly (age 2 and older).	287. Prefers to play with younger children.
273. Health problems.	281. Clumsy doing things with hands.	288. Dependent, clingy, very upset about separating.
274. Growth, height, or weight problems.	282. Does not talk well for age.	289. Passive; seldom shows initiative.
275. Eating problems.	283. Speech difficult to understand (age 3 and older).	290. Attention; poor listener.
276. Bowel and bladder problems, toilet training.	284. Stutters or stammers.	291. Can't sit still; hyperactive?
277. Sleep problems	285. Does not understand well.	292. Disorganized; messy, careless, irresponsible.
278. Aches and pains.		

293. Demanding; strong-willed.
294. Disobedient;
295. Overly aggressive.
296. Timid, fearful, worries a lot.
297. Unhappy; cries or whines a lot.
298. Seldom plays with other children.
299. Lacks self-confidence.
300. Other problems.

31

Child Development Inventory Profile

Name _____ Date Completed _____ Age **5-0**

Special Problems _____ Birthdate _____ Sex **M**

	Social	Self Help	Gross Motor	Fine Motor	Expressive Language	Language Comprehension	Letters	Numbers	General Development

This five-year-old was seen in a pediatric developmental disabilities clinic for assessment.

On the CDI Profile, all the developmental scores, including the General Development score, fall in the developmentally delayed range. At age five, this child's developmental functioning appears to be at a 2-6 to 3-6 year level.

Multiple problems are also reported (11).

Test results included a Merrill-Palmer Non-Verbal IQ of 60 and a Vineland Adaptive Behavior Composite Score of 64. The Vineland parent interview yielded the following age equivalents: Socialization (30 months); Daily Living (38 months); Motor (41 months); Communication (35 months); Composite (36 months).

S	SH	GM	FM	EL	LC	L	N	GD

Score _____ _____ _____ _____ _____ _____ _____ _____ _____

PROBLEMS

271. Seems to have trouble seeing.
272. Seems to have trouble hearing.
273. Health problems.
274. Growth, height, or weight problems.
275. Eating problems.
276. Bowel and bladder problems, toilet training.
277. Sleep problems
278. Aches and pains.

279. Energy problems; tired and sluggish.
280. Clumsy; walks or runs poorly (age 2 and older).
281. Clumsy doing things with hands.
282. Does not talk well for age.
283. Speech difficult to understand (age 3 and older).
284. Stutters or stammers.
285. Does not understand well.

286. Immature; acts much younger.
287. Prefers to play with younger children.
288. Dependent, clingy, very upset about separating.
289. Passive; seldom shows initiative.
290. Attention; poor listener.
291. Can't sit still; hyperactive?
292. Disorganized; messy, careless, irresponsible.

293. Demanding; strong-willed.
294. Disobedient;
295. Overly aggressive.
296. Timid, fearful, worries a lot.
297. Unhappy; cries or whines a lot.
298. Seldom plays with other children.
299. Lacks self-confidence.
300. Other problems.

32

Child Development Inventory Profile

Name _____ Date Completed _____ Age **20M**

Special Problems _____ Birthdate _____ Sex **M/F**

Social	Self Help	Gross Motor	Fine Motor	Expressive Language	Language Comprehension	Letters	Numbers	General Development

Age in Years and Months

The CDI results here are for fraternal twins age 20 months, a boy and a girl. Both are presumed to be developing normally.

The CDI Profile for the girl (○) is entirely within normal limits. The boy's CDI Profile (●) includes one low area, expressive language. However, one more item answered YES would place his expressive language score technically within the normal range.
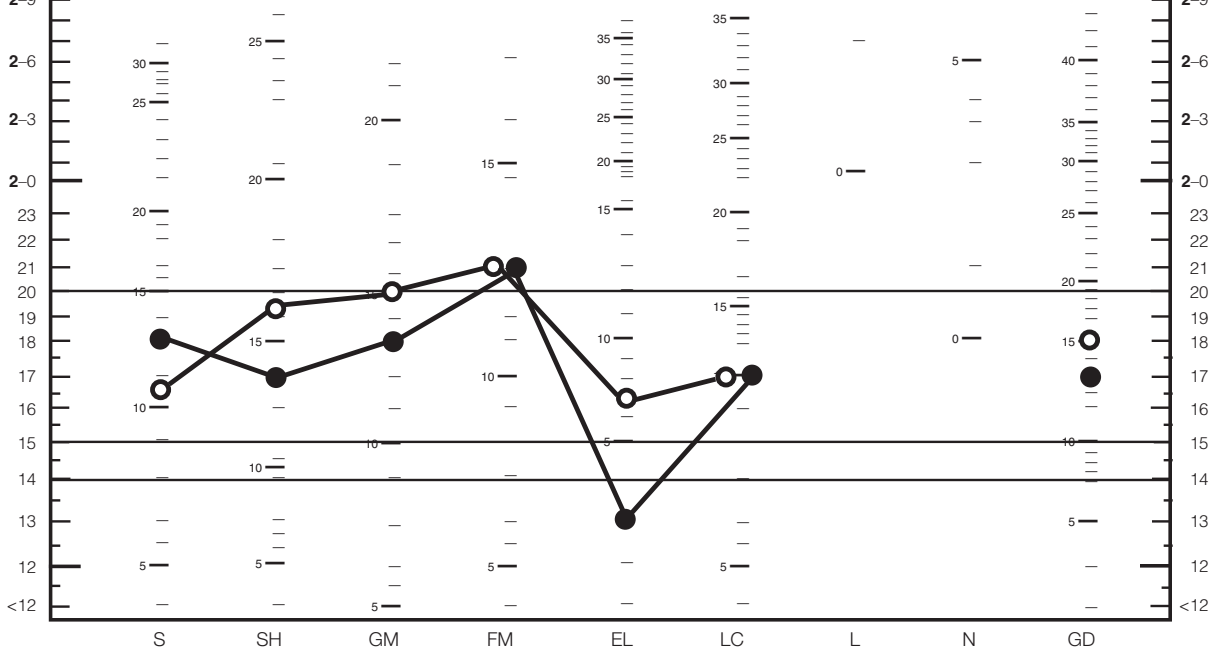
No problems are reported for the boy; the girl is reported to be demanding and disobedient.

Comparing the results for each twin suggests that the girl is developing slightly ahead of the boy in the areas of self help, gross motor skills, and expressive language. The Social Scale results plus the two problems items reported for the girl - demanding and disobedient - suggest that she is more assertive and challenging than her twin brother.

Some of these developmental differences are consistant with the sex differences described in the next section.

Score _____ _____ _____ _____ _____ _____ _____ _____ _____

S   SH   GM   FM   EL   LC   L   N   GD

PROBLEMS

271. Seems to have trouble seeing.
272. Seems to have trouble hearing.
273. Health problems.
274. Growth, height, or weight problems.
275. Eating problems.
276. Bowel and bladder problems, toilet training.
277. Sleep problems
278. Aches and pains.

279. Energy problems; tired and sluggish.
280. Clumsy; walks or runs poorly (age 2 and older).
281. Clumsy doing things with hands.
282. Does not talk well for age.
283. Speech difficult to understand (age 3 and older).
284. Stutters or stammers.
285. Does not understand well.

286. Immature; acts much younger.
287. Prefers to play with younger children.
288. Dependent, clingy, very upset about separating.
289. Passive; seldom shows initiative.
290. Attention; poor listener.
291. Can't sit still; hyperactive?
292. Disorganized; messy, careless, irresponsible.

F 293. Demanding; strong-willed.
F 294. Disobedient;
295. Overly aggressive.
296. Timid, fearful, worries a lot.
297. Unhappy; cries or whines a lot.
298. Seldom plays with other children.
299. Lacks self-confidence.
300. Other problems.

SEX DIFFERENCES

The original MCDI provided separate age norms for boys and girls because there were some sex differences in rates of development. In the interest of simplicity, the CDI provides one set of norms for both sexes combined. However, when interpreting results for a child the following sex differences that were observed should be considered.

Developmental Items

Sex differences were found for a number of behaviors. Because of the large number of developmental items (270), only items that showed clear differences (p. <.01) are reported. First, the numbers of items by scale are shown in Table 7, then the items themselves are listed.

Table 7
Numbers of Items Showing
Sex Differences for Each Scale

Scale	Soc	SH	GM	FM	EL	LC	L	N	Total
Sex Related	3/40	11/40	1/30	3/30	6/50	7/50	1/15	0/15	32/270

The results below show the earlier development of self help skills and language skills in girls. For self help skills, this is clearest in the three to five year age range, including toilet-training, dressing, washing, brushing teeth, and taking care of personal belongings. Among language skills, differences are most common for expressive language skills from age two to three, including longer sentences at earlier age, correct sequence of words, complexity of expression, and speech intelligibility. A few differences found for the Social and Fine Motor Scales do not provide a sound basis for any generalizations.

The 32 items are listed below, scale by scale, in age order. In front of each item is shown the ages at which 75 percent of boys, then 75 percent of girls, were reported doing the behavior. Younger age indicates earlier development of this behavior in boys or girls.

Social Items

Boys: 2-0 Understands "Wait a minute." Waits patiently
Girls: 21m for short periods of time.

Boys: 2-6 Speaks positively about self — says, "I'm
Girls: 2-6 good," "I'm big,"etc.
(While 75 percent YES point is the same, over the whole age range studied, boys do this significantly more often than girls)

Boys: 2-9 Plays "pretend" games with other children,
Girls: 2-3 "house," etc., pretending to be "Mom or Dad, teacher, astronaut."

Self Help

Boys: 15m Tries to put on shoes. Or puts them on.
Girls: 15m
(Higher percentage of girls)

Boys: 3-0 Toilet-trained for urine control and bowel
Girls: 2-6 movements.

Boys: 3-6 Undresses completely without help.
Girls: 3-0

Boys: 3-0. Brushes teeth without help.
Girls: 3-0
(Higher percentage of girls)

Boys: 3-9 Washes face without help.
Girls: 3-3

Boys: 3-9 Notices when shirt (blouse) or pants are inside
Girls: 3-6 out and turns them right-side-out.

Boys: 3-9 Dresses and undresses without help, except for
Girls: 3-6 tying shoelaces.

Boys: 5-3 Takes care of personal belongings.
Girls: 4-6

Boys: 5-0 Buttons a shirt, blouse, or coat, having all the
Girls: 4-3 buttons in the correct holes.

Boys: 5-0 Goes to the toilet without help; wipes self,
Girls: 4-3 flushes toilet, and washes hands.

Boys: >6-0 Ties shoelaces.
Girls: 6-0

Gross Motor

Boys: 4-9 Swings on swing, pumping by self.
Girls: 4-6

Fine Motor

Boys: 2-3 Turns pages of children's book one page at a
Girls: 21m time.

Boys: 3-0 Holds crayon with fingers and thumb,
Girls: 2-0 somewhat like an adult.

Boys: 5-0 Colors within the lines in a coloring book.
Girls: 4-0

Expressive Language

Boys: 2-6   Talks in sentences at least four words long.
Girls: 2-3

Boys: 2-6   Speaks clearly; is understandable most of
Girls: 2-6   the time.
(Higher percentage for girls)

Boys: 2-6   Asks questions beginning with "what"
Girls: 2-6   or "where."
(Higher percentage for girls)

Boys: 3-0   Describes objects specifically, in detail, for
Girls: 2-3   example, "Dolly has hair, a dress." "Doggie
           has a tail." etc.

Boys: 2-9   Talks with words in correct order.
Girls: 2-0

Boys: 3-6   Says — pronounces — most words he(she)
Girls: 2-6   uses correctly.

Language Comprehension

Boys: 18m   Points to at least three body parts, such as
Girls: 15m   eyes, nose, mouth, hands or feet, when asked.

Boys: 2-3   Expresses likes and dislikes in words.
Girls: 2-0

Boys: 2-6   Talks about feelings; says he(she) feels
Girls: 2-6   "happy, sad, bad, or mad."
(Higher percentage for girls)

Boys: 2-9   Understands what "full" and "empty" mean;
Girls: 2-6   uses these words correctly.

Boys: 3-0   Refers to self and other children as "boy" or
Girls: 2-6   "girl" correctly.

Boys: 3-3   Takes part in conversations, both talking and
Girls: 3-0   listening in turn.

Boys: 3-3   Tells age correctly when asked, "How old
Girls: 3-0   are you?

Letters

Boys: 3-6   Tries to "read" familiar books. Or reads them.
Girls: 3-0

Problems Items

Problems that are more commonly reported for boys, age three to five, are listed in Table 8. For girls only one problem, sleep, is more common (17 percent vs. 4 percent) and then only for three-year-olds.

Table 8
Problems More Common Among Boys Age Three to Five

Problem	Percent of Boys	Girls
Bowel and bladder problems, toilet training.	12	6
Clumsy; walks or runs poorly	4	2
Clumsy in doing things with his/her hands.	6	3
Does not talk well for age.	13	3
Speech is difficult to understand	15	5
Does not seem to understand well; is slow to "catch on."	6	2
Does not pay attention; poor listener.	10	2
Can't sit still; may be hyperactive.	13	2
Disorganized; messy, careless, irresponsible.	12	3
Disobedient; does not mind well, resists.	8	4
Overly aggressive. (Four year olds)	32	22
Timid, fearful, or worries alot.	5	1
Unhappy; cries alot or whines alot.	8	2
Seldom plays with other children.	7	2

Delayed Range CDI Profile

Sixty-five percent of the children with delayed range CDI Profiles were boys. This is consistent with the parents' reports of some special problem or disability (66 percent were boys). It is also consistent with reported problems classified as major developmental disabilities or physical handicaps (60 percent were boys).

VALIDITY AND RELIABILITY

The validity of the CDI can be determined in a number of ways: first, by examining CDI results for norm group children at younger and older ages, second, by comparing their CDI results to psychological test results, and third, by looking at CDI results for children with developmental and other problems.

Relationship To Age

The CDI is designed to measure the developmental progress of young children from infancy to school age. It is an age scale. By design, it includes items that differentiate the behavior and development of younger children from the behavior and development of older children. Infants do not walk and talk, toddlers do, and preschoolers do a whole lot more. To be valid, the CDI scales must be sensitive to these changes that occur with age. The relationship of the CDI scales to age is shown in Table 9 in two ways: first, by the correlations of scores on the scales with age, and second, by the progression in mean scores with increasing age.

Table 9
CDI Scales' Relationship to Age

| Scale | Correlation[1] | Age Means[2] | | | | | |
		1yr	2yr	3yr	4yr	5yr	6yr
Social	.81	7	23	34	38	39	39
Self Help	.84	8	21	28	34	38	39
Gross Motor	.81	8	19	24	27	29	29
Fine Motor	.84	7	15	21	25	29	29
Expr Language	.83	4	20	43	47	48	49
Language Comp	.84	7	21	40	47	49	49
Letters	.70	0	0	2	4	9	12
Numbers	.83	0	2	7	10	11	13
Gen'l Develop	.89	5	30	50	61	66	69

[1]Pearson product-moment correlation
[2]Age intervals: 1 year (12 to 15 months), 2 year (2-0 to 2-3) etc.

Developmental progress occurring with age can be appreciated by observing the progression in mean scores from ages one to six years. This is the first requirement of a developmental scale if it is going to differentiate younger children from more developed, more skilled older children. The Social Scale shows progression up to age four and then flattens out. The Self Help Scale shows increase in mean scores up to age five, the Gross Motor Scale up to age four, and the Fine Motor Scale up to age five. The Expressive Language Scale means progress to age four, while the Language Comprehension Scale shows progression to about age five. The Letters and Numbers Scales are designed to measure the knowledge and skills of older preschoolers and kindergarten age children. Letters Scale means show progression from age three to six years, while the Numbers Scale shows progression from age two to six years. Finally, the General Development Scale means show progression over the entire age range. These results reflect the fact that some scales include items that span the entire age range, while other scales have a limited number of items at older age levels.

To be valid for identifying and assessing children with developmental problems, a developmental scale must do more than demonstrate progression in mean scores with increasing age. Also, presumably normal children, the norm group children, must score within a reasonable range around the average performance for children of their age. For example, the large majority of three-year-olds (age 3-0) must do better than the average two-year-old (age 2-1). This 30 percent below age cutoff defines a range of normal such that 98 percent of children should score above the cutoff and 2 percent should fall below the cutoff. This assumes a normal distribution. If 98 percent of norm group children score within this range, then a child who obtains scores below the 30 percent cutoff probably has a significant developmental problem.

The percentages of norm group children who obtained low scores for their age were determined. The percentage of children scoring within the 25-30 percent below age range and greater than 30 percent below age was determined. This was done for each scale and for CDI results overall by one year age groups. These results are shown in Table 10, beginning with the General Development Scale. By design, the General Development Scale should be the most age-discriminating scale over the entire age range. Low scores for age are most uncommon on this scale. On the Social Scale, low scores for age are uncommon for one- to four-year-olds, more common for four- to six-year-olds. This is due to the limited number of Social Scale items above age three. The Self Help, Gross Motor and Fine Motor Scales show a maximum of five percent low scores from age one to six. Both language scales show low rates of low scores up to age four, with higher rates for four-year-olds. These scales have limited numbers of items at older age levels. For the Letter and Number Scales, incidence of low development for age is shown only for three- to six-year-olds because of the limited age range of these scales. The Letters and Numbers Scales show higher incidences of low scores than any of the other scales, especially for four-year-olds.

Finally, the percentages of children who had a CDI Profile which was "borderline" or "delayed" for one or more scales is shown. These percentages are higher than for individual scale results as they are based on occurence of low scores on any scale. CDI profiles with one or more scores in the delayed range are least common among one-year-olds (1.5 percent) and most common among four-year-olds (15 percent). This is due primarily to the rates of delayed scores on the Expressive Language, Language Comprehension, Letters and Numbers Scales among four-year-olds—all about 10 percent.

Kindergarten Validity Study

Scale/Age	15m-2yr	2yr	3yr	4yr	5yr
Gen. Dev.					
25-30% Below Age Range	0	1	0	0	1
>30% Below Age	0	0	1	1	2
Social					
25-30% Below Age Range	5	3	3	2	4
>30% Below Age	0	1	2	9.5	5.5
Self Help					
25-30% Below Age Range	1.5	0	0	2	2.1
>30% Below Age	1.5	3	2	3	2.5
Gross Motor					
25-30% Below Age Range	0	1	1	2	0
>30% Below Age	0	3	3	3	2
Fine Motor					
25-30% Below Age Range	2	0	2	4	0
>30% Below Age	0	3	3	1	2
Exp. Language					
25-30% Below Age Range	1.5	0	3	2	0
>30% Below Age	1.5	2	2	9.5	4
Language Comp.					
25-30% Below Age Range	3	1	2	4	0
>30% Below Age	1.5	1	1	9.5	2.5
Letters					
25-30% Below Age Range			1	1	6.5
>30% Below Age			5	10.5	2
Numbers					
25-30% Below Age Range			0	1	2.5
>30% Below Age			5	9.5	4
CDI Profile					
25-30% Below Age Range	11.5	5	5	5	7.5
>30% Below Age	1.5	9	10	15	11

The relationship between parents' CDI reports and children's subsequent school performance was studied for 132 kindergarten students. CDI reports obtained in the fall of the kindergarten year were compared to reading and math testing done near the end of kindergarten. Testing was done as a part of Title I program eligibility identification. The reading and math skills test is an Assessment test developed by Chapter I: First Grade Pretest based on Macmillan Objectives Readiness Level 7. The reading and math skills test is a group-administered achievement test.

Achievement test results usually correlate with children's age and parents' level of education. For this narrow age group (five to six years), reading results correlated with age (.23, p. <.01) and with parents' education (.17, p. <.05). Math test results did not correlate with either child's age or parents' education. This suggests that the reading test is a more discriminating test than the math test, so that its use as a validity standard is more trustworty. The relationship between parents' CDI reports and reading and math test scores are shown in Table 11.

Table 11
Correlations between CDI Scale Results
and Achievement Test Results*
N = 132

	S	SH	GM	FM	EL	LC	L	N	GD
Reading	NS*	.35	NS	NS	.36	.42	.56	.65	.69
Math	NS	NS	NS	.31	.39	.31	.49	.55	.59

*Pearson product-moment correlation - NS = Not significant: There is no point in reporting numbers for correlations that are not significant.

These results demonstrate that, among the norm group children, low scores for age are relatively infrequent, especially for the General Devlopment Scale. CDI Profile results indicate that, for two- to six-year-olds, profiles with one or more delayed range scores typically occur about ten percent of the time. This suggests that when a child who is being assessed for possible developmental problems obtains a CDI profile with one or more delayed scores, the child probably has a significant developmental problem.

For reading achievement, the General Development Scale is highly correlated (.69) as are the Letter (.56) and Number (.65) scales. At this age level, five to six, the General Development Scale consists primarily of letter and number items. For math achievement, a similar pattern is shown but the correlations are somewhat lower. This may be because the math achievement test is less discriminating than the reading test.

The following is important regarding the validity of the Letters and Numbers Scale results. For five-year-olds, delayed range scores are trustworthy. Below age five, delayed range scores need to be interpreted with caution.

Early Childhood/Special Education Validity Study

South Saint Paul early childhood screening provides for early identification and early intervention for special educational needs children by 1) outreach programs for infants up to age three and by 2) outreach/mass screening for children age three and one-half to four and one-half.

There are 58 children enrolled in the South Saint Paul Early Intervention Program. CDI results were available for 26 of these children including 18 boys and eight girls. They ranged in age from two to six years. The largest number (11) were four-year-olds.

Nineteen of these 26 children (73 percent) had CDI Profiles that were delayed in one or more areas. Seven of the 19 CDI delayed children, had generally delayed profiles, including a General Development Scale in the delayed range. Of the seven children with normal range CDI Profiles, five had speech and language problems reported on the CDI, one was described as "severely shy", and one had juvenile rheumatoid arthritis. Among the 26 Early Childhood/Special Education children all were identified by either having a delayed CDI profile (19) or by problems reported on the CDI (7). The CDI results for these children appear to meaningfully describe the range of these children's problems from lesser speech and language problems to severe developmental disabilities.

Children with Health Problems

Among 24 children reported to have various health problems, 15 children suffered from chronic ear infections (otitis media), historically or presently. Of these 15 children, five were reported on the CDI to have speech and language problems, one a hearing problem, and one an attention problem. Four children suffered from asthma. The CDI Profiles of these four asthmatic children were generally within normal limits. One child, who was described as having "severe asthma" and a history of 13 hospitalizations in three and one-half years, had a delayed Social Scale score and three behavior problems reported: "demanding," "disobedient," and "can't sit still; may be hyperactive."

While there are not enough sick children in this sample to reach meaningful conclusions about their CDI results, they are described here to highlight the importance of considering the effects of illness on the development and adjustment of young children.

Reliability Data

The reliability of each of the developmental scales is shown in Table 12. These correlations are a measure of internal consistency and should be appreciated in relation to the age range and validity of each of the scales. Those scales with only a few items at older age levels show lower reliabilities at these age levels. The Expressive Language, Langugage Comprehension, and General Development Scales show the highest reliabilities, as would be expected of longer scales. These results suggest that scores that fall in the one- to four- or five-year range are more reliable than scores that fall in the four- or five- to six-year range. Given the primary purpose of the CDI, which is to identify and assess young children who are developmentally delayed, this is an acceptable set of scale reliabilities. The Letters and Numbers Scales are shorter scales and are thus slightly less reliable.

Table 12
Scale Reliability by Age*

Age/Scale	N	S	SH	GM	FM	EL	LC	L	N	GD
12-17m	43	.87	.83	.84	.73	.91	.93	—	.84	.90
18-23m	48	.89	.81	.79	.68	.94	.92	—	.74	.89
2-0 - 2-5	54	.89	.78	.83	.71	.96	.95	.57	.76	.90
2-6 - 2-11	44	.88	.88	.80	.71	.93	.93	.65	.68	.86
3-0 - 3-5	39	.80	.77	.76	.82	.90	.93	.60	.73	.87
3-6 - 3-11	60	.71	.80	.73	.77	.75	.82	.67	.71	.82
4-0 - 4-5	42	.73	.68	.79	.79	.86	.86	.80	.67	.75
4-6 - 4-11	62	.58	.76	.34	.59	.87	.83	.86	.67	.79
5-0 - 5-5	65	.71	.60	.33	.52	.45	.67	.77	.45	.70
5-6 - 5-11	92	.63	.48	.54	.67	.55	.54	.81	.55	.69

*Croenbach's Alpha-internal consistency measure

CORRELATIONS AMONG THE SCALES

Table 13 shows the correlations among the CDI scales for selected six month age groups for two-, three-, four-, and five-year olds. It is helpful to appreciate those scales that are highly correlated. For example, the two language scales are highly correlated (.90+). The Social Scale correlates highly with both language scales through age four and one-half. This suggests that social and language development mutually reinforce each other. Or, stated negatively, delayed social or language development may inhibit development in the other area. Language development is highly correlated with Numbers Scale results.

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Table 13
CDI Scale Inter-correlatons*

Age 2 - 2½ years (N = 54)

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	SH	GM	FM	EL	LC	L	N
S	.65	.55	.39	.77	.79	.41	.71
SH		.60	.61	.61	.62	.50	.66
GM			.39	.59	.58	.40	.54
FM				.49	.52	.43	.62
EL					.91	.60	.82
LC						.59	.84
L							.61

<div style="text-align:center">

Age 3 - 3½ years (N = 39)

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	SH	GM	FM	EL	LC	L	N
S	.25	.41	.52	.71	.63	.34	.52
SH		.36	.46	.24	.30	.19	.19
GM			.48	.33	.20	.05	.17
FM				.56	.62	.56	.61
EL					.90	.54	.75
LC						.54	.80
L							.61

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Age 4 - 4½ years (N = 42)

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	SH	GM	FM	EL	LC	L	N
S	.73	.68	.73	.83	.85	.46	.66
SH		.74	.72	.76	.77	.48	.68
GM			.64	.64	.74	.26	.52
FM				.70	.69	.65	.65
EL					.94	.57	.71
LC						.50	.74
L							.73

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Age 5 - 5½ years (N = 65)

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	SH	GM	FM	EL	LC	L	N
S	.51	.51	.48	.51	.45	.43	.42
SH		.57	.59	.55	.50	.47	.52
GM			.55	.52	.53	.35	.44
FM				.69	.65	.68	.63
EL					.81	.60	.73
LC						.60	.73
L							.77

*Pearson product-moment correlation

Table 14 shows the General Development Scale correlation with the individual developmental scales at selected ages. The General Development Scale is highly correlated with most of the CDI scales. It is consistantly highly correlated with the Expressive Language and Language Comprehension Scales from age one- to five-years. At age five, it is most highly correlated with the Fine Motor, Letter, and Number Scales. The General Development Scale correlates highest with the areas of early child development that are considered to be most related to learning in school - language, fine motor skills, and letter and number knowledge.

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Table 14
General Development Scale Correlation
with Individual Developmental Scales

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Age/Scale	S	SH	GM	FM	EL	LC	L	N
12-17m	.84	.82	.78	.84	.85	.88	—	—
2-0 - 2-5	.81	.71	.74	.64	.92	.91	.56	.83
3-0 - 3-5	.71	.47	.52	.79	.83	.84	.58	.76
4-0 - 4-5	.84	.86	.75	.85	.86	.86	.71	.83
5-0 - 5-5	.59	.72	.58	.85	.77	.72	.84	.81

*Pearson product-moment correlation

APPENDIX

CHILD DEVELOPMENT INVENTORIES - DESCRIPTIONS, RESEARCH, AND REFERENCES

The original MCDI was published in 1972. This was followed by the Minnesota Prekindergarten Inventory (1979), which is for assessment of kindergarten readiness. Next came the Minnesota Infant Development Inventory (1980), for reviewing the development of infants in the first fifteen months. Two early childhood/preschool screening measures were then created: The Preschool Development Inventory (1987) and the Early Child Development Inventory (1988). The Child Development Review-Parent Interview (1990) was then created to provide and alternative to the inventory format.

Following are descriptions of the instruments and research related to them. Finally, there is a list of references describing published research with the Child Development Inventories, beginning with the MCDI. Not included are numerous graduate student theses.

Minnesota PreKindergarten Inventory (age 4 1/2 to Kindergarten) (Ireton & Thwing. 1979).

The MPI is a kindergarten readiness measure. It provides detailed information about the child's development, academic readiness skills, adjustment, and various symptoms. The MPI consists of an inventory booklet and answer sheet for the parent, a manual, a set of scoring templates and an MPI Profile for recording results. The MPI booklet contains 150 items, including 90 developmental items, and 60 items measuring behavior problems and various symptoms. The developmental scales, adjustment scales, and symptoms clusters are outlined below.

Development:	Self Help, Fine Motor, Expressive Language, Comprehension, Memory, Letters, Numbers
Adjustment:	Immaturity, Hyperactivity, Behavior Problems, Emotional Problems
Symptoms:	Motor, Language, Somatic, Sensory

Interpretation: The child's score on each scale is represented as a percentile for the total prekindergarten age group. In this way, a child whose development falls in the bottom five to ten percent among his or her potential kindergarten classmates can be identified.

Research: The MPI's validity as a kindergarten readiness measure has been studied by comparing mothers' prekindergarten MPI results with kindergarten teachers' ratings of students' performance at year's end (Ireton, Lun & Kampen, 1981). First norms were established for 360 white children age four and one-half to five and one-half from Bloomington, Minnesota. Then children falling in the extreme five percent on any of the development or adjustment scales were identified. Among poorly performing kindergarten students, 60 percent were identified by low scores on the developmental scales. The adjustment scales were not predictive of poor kindergarten performance. If children had extreme behavior problems scores, but had good development, these children did well enough in kindergarten. Among children with normal range developmental scores, ninety-seven percent were classified by teachers as performing adequately in kindergarten.

Minnesota Infant Development Inventory (Birth to 15 Months) (Ireton and Thwing, 1980).

The MIDI measures infant development in five areas: gross motor, fine motor, language, comprehension, and personal-social. The MIDI booklet includes one item per month of age in each area of development, which provides a developmental map for the first fifteen months. The mother answers YES or NO to each item to describe her baby's present development. She is also asked to describe her child briefly and to report any problems or concerns. The MIDI may also be used as an observation guide by the professional, or as an interview guide for parent's who have difficulty completing a questionnaire.

Interpretation: The child's level of development in each area is compared to the child's actual age. Below age guidelines are provided to identify infants whose development is possibly delayed. The MIDI items and the results for a particular child may also be used as a parent education tool - "These are the things that children do in the first fifteen months."

Research: The MIDI items were drawn from earlier research with the Minnesota Child Development Inventory. Developmental age norms have been established for these items. One study (Creighton and Sauve, 1988) compared MIDI results to Bayley Mental Scale scores for a sample of high risk eight-month olds (N-86). Results on each measure, classified as delayed or not delayed, showed good overall agreement (81 percent to 90 percent). The MIDI demonstrated good sensitivity (85 percent) in detecting delay and fair specificity (77 percent) in identifying normal development.

Early Child Development Inventory (Age 15 months to 3 years) (Ireton, 1988).

The ECDI, a brief screening measure, consists of a one-page two-sided questionnaire for the parent and a brief manual for the professional. The questionnaire is divided into six sections:

1) **General Development Scale:** a 60-item measure of the child's overall development. These items describe motor, language, self-help, and social skills.

2) **Possible Problems List:** 24 items that describe various symptoms and behavior problems.

3) **Child Description:** parent's brief description of the child.

4) **Special Problems or Handicaps:** parent's report of problems that may be major handicaps or obstacles to learning.

5) **Questions or Concerns:** parent's report of concerns, or simply questions they have about their child.

6) **Parent Status:** "How are you doing, as a parent and otherwise, at this time?"

Interpretation: Results for each section of the ECDI are classified as 1) showing no evidence of any problems, 2) raising concern about a possible problem, or 3) suggesting a possible major problem. Collectively, they provide measures of the child's overall development, possible problems, the parent's concerns, and most important, indicators of the need for followup evaluation.

Research: The General Development Scale total score is highly age discriminating, that is, the score is highly correlated with age (r=.92) (Colligan, 1977). A low score on the General Development Scale is very predictive of a significant developmental problem (90 percent) (Ireton, Thwing & Currier, 1977). The accuracy of the possible problems items for the identification of current problems has not yet been studied. Questions three to six are used as additional information beyond the standardized data obtained by the General Development Scale and problems list.

Preschool Development Inventory (Age 3-0 to Kindergarten) (Ireton, 1987).

The format of the PDI is the same as the ECDI. The PDI General Development Scale items are motor, language, self-help, and social behaviors that are appropriate to the three to five year age range. The possible problems items are similar to the ECDI problems items.

Interpretation: Results are classified in the same fashion as with the ECDI: 1) No apparent problem, 2) possible problem, 3) possible major problem.

Research: The PDI's validity for preschool screening has been studied with a sample of three- and four-year-old children (N=220). These children were screened in the spring, 16 months prior to kindergarten entry, to allow time for early intervention. The PDI sample was obtained in South St. Paul, Minnesota.

The screening includes health history from the parent, vision and hearing check, and brief developmental testing with the Developmental Indicators for the Assessment of Learning (DIAL). For this study, parents were also asked to complete the PDI at home and bring it to the screening. Referral decisions were based primarily on direct evaluation results, with the parents' PDI results used in a supplementary fashion. Twenty-four percent of the 220 children (N=53) were referred for followup assessment. Twenty-five children (11 percent) were provided with preschool special education services. About two years later, at the end of the kindergarten year, teachers rated all their students' performance.

On the PDI, the 25 children referred for preschool special education services more commonly showed below average general development scores than non-referred children (40 percent versus 7 percent) and also had more possible problems (44 percent versus 10 percent). Overall PDI results yielded a sensitivity of .68 and specificity of .88 (68 percent of referred children had PDIs with major problems, while 88 percent of non-referred children had PDIs that were normal range).

Some PDI measures predicted kindergarten performance two years later. Low scores on the General Developmental Scale (bottom 10 percent) are associated with a 90 percent change of poor or below average performance in kindergarten. High numbers of possible problems items (8 or more—extreme 5 percent) are also predictive. All these children were poor or below average students. Certain individual problems items were also predictive. These include: "talks only in short phrases", "has trouble expressing ideas", "slow to catch on—does not comprehend well", and "immature: acts much younger than age." Among kindergarten children for whom parents' prior PDI reports had indicated no problems of any kind, 82 percent were doing well (average or above) in kindergarten.

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