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COMPARABILITY OF WPPSI-R AND SLOSSON TESTS AS A FUNCTION OF THE  
CHILD'S ETHNICITY

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The purpose of this study was two-fold. First, this study compared the performance of children on the WPPSI-R with their performance on the Slosson Intelligence Test. Secondly, this study explored the comparability of minority and non-minority students' scores on the WPPSI-R. Seventy-five children between 3 and 7 years of age were administered the WPPSI-R and Slosson. Of this sample, 25 children were White, 25 children were Black, and 25 children were Mexican American. Low, but significant correlations were found between WPPSI-R and Slosson scores. The Vocabulary subscale of the WPPSI-R correlated highest, while the Geometric Design subscale correlated the lowest with the Slosson test scores. Further analyses indicated that White children obtained significantly higher scores on the WPPSI-R than both Black and Mexican American children.

Table of Contents

	Page
COMPARABILITY OF WPPSI-R AND SLOSSON TESTS AS A FUNCTION OF THE CHILD'S ETHNICITY	
Introduction. . . . .	1
Validity of the WPPSI	
Correlates of the WPPSI with Brief Measures of Intelligence	
Comparability of the Slosson and Weschler Tests	
Minority Populations	
Minority Group Intelligence Test Performance	
Summary and Purpose of the Study	
Method. . . . .	20
Participants	
Measures	
Examiners	
Procedure	
Results . . . . .	22
Discussion. . . . .	26
Appendix A. . . . .	30
Appendix B. . . . .	126
Appendix C. . . . .	129
References. . . . .	132

List of Tables

Table		Page
1.	Correlation Matrix Between All Subscales of the WPPSI-R and the Slosson Intelligence Test Scores. . . . .	23
2.	Means, Standard Deviations, and F Values for All Groups on All Subscales of the WPPSI-R and Slosson . . . . .	24
3.	Post Hoc Comparisons for All Groups on All Subscales of the WPPSI-R and Slosson. . . . .	25

COMPARABILITY OF WPPSI-R AND SLOSSON TESTS AS A FUNCTION OF  
THE CHILD'S ETHNICITY

A commonly used measure for assessing the intellectual level of young children is the Wechsler Preschool and Primary Scale of Intelligence (WPPSI). Three different types of Wechsler scales exist. These are the Wechsler Adult Intelligence Scale, Revised (WAIS-R); the Wechsler Intelligence Scale for Children, Revised (WISC-R); and Wechsler Primary and PreSchool Scale of Intelligence (WPPSI). Over the last decade, both the WAIS-R and WISC-R have been revised. Currently the WPPSI is in the process of being revised.

Wechsler studied the standardized tests available during the late 1930's to design his first intelligence test, the Wechsler-Bellevue Intelligence Scale, Form I. Using the Army Alpha (for the Information and Comprehension subscales), Stanford-Binet (for the comprehension, Arithmetic, Digit Span, Similarities, and Vocabulary subscales), Healy Picture Completion Tests and other tests which used picture completion items (for the Picture Completion subscale), Army Group Examinations (for the Picture Arrangement subtest), Kohs Block Design Test (for the Block Design subtest), and Army Beta (for the Digit Symbol and Coding subtest), Wechsler developed an additional seven

other different subtests to compose the total mental abilities test based on his theory of the global nature of intelligence. He believed intelligence to be only a part of the entire personality and defined intelligence as: "the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment." All Wechsler intelligence tests were designed based upon this theory including the WPPSI. Therefore, IQ scores obtained from the total test were assumed to represent a general index of mental ability.

The initial WPPSI was published in 1967 for use with children from 4 to 6 1/2 years of age. It consists of 11 subtests, 8 of which are similar to the WISC-R and 3 of which are unique to the WPPSI. The IQ scores are deviation IQs and derived in a similar fashion to those of the WISC-R: Verbal, Performance and Full Scale IQs. The WPPSI is often considered a downward extension of the WISC-R, but in actuality it is a totally separate test. Some assets of the WPPSI are it's excellent psychometric properties, the capacity to provide useful diagnostic information, and the high interest children show in completing the test.

The WPPSI was originally standardized using 1,200 children consisting of 100 boys and 100 girls in each of 6 age groups, with a chronological age range of from 4 to 6 1/2 years. It has been found to have reliabilities ranging

from .77 to .87 for the individual subtests, and from .93 to .96 for the 3 scales. Test-retest reliability has been found to range from .86 to .91 for the 3 scales with the Performance scale subtests showing greater practice effect than the Verbal scale subtests.

After 20 years of use, the WPPSI is in the process of being revised to update the norms and to extend the age range of the scale downward from age 4 to age 3 and upward from age 6 $\frac{1}{2}$  to age 7. Major changes of the revised version of the WPPSI consists of adding an Object Assembly subtest to the existing 11 subtests of the WPPSI. None of the subtests composing the original WPPSI were eliminated. However, several changes were made within some of the subtests. Basically, this has consisted of the following: 1) Replacing items that are also on the WISC-R; 2) Eliminating questions considered to be obsolete or biased; and 3) A section of picture questions was introduced at the beginning of several subtests to help introduce the subtest to the children and extend the age range. Finally, the usual testing time for the WPPSI is 50 to 75 minutes whereas administration of the WPPSI-R takes about 90 to 120 minutes. As has been pointed out by Brown (1983), whenever a scale is developed or revised its psychometric properties must be examined.

Studies comparing scores on the original versus revised

versions of intelligence tests such as the Stanford-Binet (S-B) and the Wechsler Intelligence Scale for Children-Revised (WISC-R) have generally found the WPPSI to have satisfactory concurrent validity although IQs scores from these different tests may not be used interchangeably.

#### Validity of the WPPSI

Since the WPPSI-R was designed to replace the WPPSI, it is useful to investigate the comparability of scores between this revised version and other tests designed to measure intelligence. A review of research examining the similarity between WPPSI scores and other Wechsler scales would be especially important as a basis for evaluating the anticipated psychometric properties of the WPPSI-R. The theoretical validity of the WPPSI has been explored. Silverstein (1986) analyzed the intercorrelations among the 11 subtests of the WPPSI for each of the 6 age groups in the standardization sample. Clusters were found that clearly corresponded to the Verbal and Performance scales. Results were in general agreement with those of previous research in which factor analysis was employed with the same data. Sattler reports the WPPSI was correlated with the 1960 norms of the Stanford-Binet and was found to have satisfactory concurrent validity. Carlson (1981) factor analyzed the WPPSI at each of 6 age levels between 4 and 6 1/2 years (1,200 subjects) through the method of principal



factors. A 2-factor solution, corresponding essentially to Wechsler's (1967) a priori grouping of the subtests into the Verbal and nonverbal or Performance scales, best described the 11 WPPSI subtests at each age level. Examination of the common, specific, and error variance components of the subtests across age levels indicated adequate test specificity to allow for individual interpretation of all subtests, except Information and Comprehension, when the null hypothesis model of ipsative interpretation of individual tests is employed. Ramanaiah (1979) completed a study investigating Wechsler's hypothesis that verbal and performance factors are the major dimensions underlying the WISC and the WPPSI subtests. A confirmatory factor analysis strategy was used. In general correlations between the WPPSI and the WISC-R were especially high with a range of from .73 to .86 for the Verbal, Performance, and Full Scales. Yule (1982) also conducted longitudinal studies of the WPPSI in which 85 children were tested using the WPPSI at 5 1/2 years and the WISC-R at 16 1/2 years. The Full Scale IQs on the two tests intercorrelated .86, illustrating the long-term predictive validity of the WPPSI.

The concurrent validity of the WPPSI has also been examined and the initial version of this inventory has been found to correlate with other measures of intelligence.

Reynolds (1981) compared correlations of WISC-R and WPPSI IQs with subtest scores on the Wide Range Achievement Test (WRAT) of 110 5-11 year olds referred by regular classroom teachers for school psychological services. No significant differences in the magnitudes of the correlations of the WPPSI and the WISC-R with the WRAT were found.

Results support the use of the 2 instruments as equivalent predictors of achievement. Another study which supports the validity of WPPSI with other measures of intelligence was completed by Arinoldo (1982). Data on the McCarthy Scales of Children's Abilities, was compared with WPPSI and the WISC-R scores. Participants consisted of 40 4-5.5 and 7-8.5 year old children. Significant moderate to strong correlations at the preschool and school-age levels between the General Cognitive Index of the McCarthy and

Wechsler's IQs were noted. Finally, Field (1987) investigated the predictive utility of Arthur's (1952) adaptation of the Leiter International Performance Scale for language-impaired and/or behaviorally disturbed preschool children. Participants were drawn from a hospital child development unit and selected because they had at least 16-point differences between Leiter and Stanford Binet scores. The sample consisted of 26 children with a mean age of 48.15 months, a mean Leiter score of 102.96, and a mean Stanford Binet score of 67.69.

All children were retested an average of 16 months later with the WPPSI. Scores on both the Leiter and Stanford Binet correlated significantly with the WPPSI Full Scale IQ. S-B scores were lower than the later WPPSI IQ scores, whereas the Leiter scores were higher.

#### Correlates of the WPPSI with Brief Measures of Intelligence

Although the WPPSI has demonstrated acceptable reliability and validity, a common criticism among clinicians regarding the original WPPSI is that it requires a considerable amount of time to administer. In view of the length of time required to administer the WPPSI it would be especially useful to explore the extent to which the WPPSI-R is related to brief measures of intelligence in view of the length of the Wechsler inventory. Several attempts have been made to derive shorter forms of the WPPSI without significantly reducing its validity (c.f. Sattler, 1987). Silverstein (1982) used data from the standardization samples for the WISC, WISC-R, WAIS, WAIS-R, and WPPSI to assess the validity of short forms devised by Satz & Mogel (1962) and Yudin (1966). Both of these authors developed brief versions of Wechsler tests by reducing the number of items within subtests rather than the number of subtests. Correlations between these short forms and the original scales from which they were derived ranged from .85 to .94 for the Verbal scale, from .82 to

.91 for the Performance scale, and from .89 to .95 for the Full Scale. Although research has indicated that short measures of Wechsler Scales developed by eliminating items has been found to correlate highly with full test scores, these abbreviated versions also contain limitations. First, such tests still require a considerable amount of time to administer. Second, because of eliminating relatively easy items, this method does not provide a good estimate of intelligence test scores of retarded individuals (c.f. Watkins, 1986).

In general, most short forms were developed by selecting subtests of the WPPSI and comparing them with scores obtained from administering the complete WPPSI. Bishop (1980) has evaluated the validity of some of these short forms of the WPPSI. Longitudinal data from 139 randomly selected children given the WPPSI at 4.5 years and the WISC-R at 8.5 years were obtained. Predictive validity increased asymptotically with number of subtests in the short form. However the particular combination of subtests constituting a short form did not appear to significantly affect predictive validity. Overall, abbreviated Wechsler tests consisting of eliminating subtests have not yielded similar scores as those obtained when the complete test has been administered. Watkins (1986) reviewed the short-form studies that have been conducted on the WAIS-R, the WISC-R,

and the WPPSI. Results show that none of the abbreviated forms were considered to be valid as a short-form IQ measure but that they could be useful as screening instruments. Since research exploring the utility of shorter forms of Wechsler scales as replacements for the complete inventory have not yielded promising results, another possibility might be to utilize other tests of mental ability which require less time to administer.

#### Comparability of the Slosson and Wechsler Tests

The Slosson Intelligence Test (SIT) is sometimes used to obtain an estimate of an individual's mental ability since it can be administered and scored relatively quickly. A paucity of research exploring the comparability of the WPPSI and SIT have been done in the past. However, numerous studies have been done comparing the WISC-R and SIT. Since the WPPSI is sometimes viewed as simply a downward extension of the WISC-R, and scores on the WPPSI and WISC-R have been found to have high correlations (Sattler, 1987), findings between the WISC-R and SIT may have implications for the WPPSI. Karnes and Oehler (1986) undertook a validity study of a later version of the SIT and correlated it with the WISC-R scores of 45 students enrolled in a gifted education program. The SIT consistently produced higher scores than the WISC-R Full Scale IQ. Jeffrey (1984a) evaluated 26 learning disabled

1st and 2nd graders in a counterbalanced design with the deviation IQ form of the SIT and the WISC-R. Moderate to good correlations were obtained between the Slosson and the WISC-R Full Scale, Verbal, and Performance IQ scores. Data suggest that the recent revision of the Slosson has corrected the tendency of earlier versions to inflate the estimated IQs of young learning disabled children. Jeffrey (1984b) also compared the intellectual functioning of children suspected of having learning disabilities in a post hoc study. Results show that the scores of the Ss evaluated with the SIT exceeded those of the participants evaluated with the WISC-R by approximately 9 IQ points. It is suggested that in spite of the conversion of the Slosson to a deviation IQ, caution should be used in interpreting Slosson IQs for suspected learning-disabled students. Sattler (1986) compared the revised SIT norms with the WISC-R in samples of children evaluated for placement in special education classes and classes for the talented and gifted. In both samples, correlations between the SIT IQ and WISC-R Full Scale IQ were significant. However, in the special education sample, SIT IQs were significantly higher than WISC-R Full Scale IQs by about 7 points. The results from both samples provide a moderate degree of support for the concurrent validity of the revised SIT norms, using the WISC-R as the criterion. However, the IQs on the 2 tests

may not be interchangeable. Another study done by Sattler (1985) compared SIT IQs (revised norms) and PPVT-R standard scores for 100 Black rural Headstart children by use of a 1-way design for repeated measures. Although the correlation of .48 between the 2 tests was significant, Slosson IQs were significantly higher than PPVT-R scores. These results suggest that the 2 instruments are not equivalent. Tomsic (1985) scored the SIT for children and adults protocols for gifted students, using both 1961 and 1981 norms, to evaluate screening characteristics of the SIT 1961 norms in contrast to the 1981 norms. Results indicate that the average 1981 norm score was 5.17 points lower than the 1961 norm scores. Only 2 students showed higher scores on the 1981 norms, 9 Ss showed no change, and the scores of 672 students declined from 1 to 15 points. Also differences between the two testings increased as the participants' age increased. As mentioned previously a limited number of studies have been done comparing the SIT and WPPSI. However, of the studies which have been done, only relatively marginal correlations have been found between these two measures. Also previous research relatively consistently indicates that higher scores are obtained using the Slosson relative to scores on the Wechsler scales. For example Baum (1979) correlated the Slosson scores of "high risk" kindergartners with the

scores they obtained on the WPPSI. The SIT scores correlated .56 with the WPPSI verbal IQ scores and .53 with Performance IQ scores. The SIT mean was 107.3 whereas the WPPSI Full Scale mean was 94.2. It is concluded that the predictive validity of the SIT was very low and that results obtained with the instrument at the kindergarten level were highly inaccurate and misleading. In another study, Baum (1979) administered the Slosson and WPPSI to 98 kindergartners. Results indicated that the Slosson Intelligence Test (SIT) greatly overestimates the IQ of kindergarten children with suspected learning disabilities. Results also indicate that when the WPPSI is viewed as the more appropriate measure of intelligence, the predictive validity of the SIT may be less than acceptable because of its tendency to produce inflated IQ scores.

Overall, scores on the Slosson Intelligence Test has not been found to be highly predictive of scores obtained on the WPPSI. However, changes made in the WPPSI-R may cause this to change. If a higher relationship is found between SIT and WPPSI scores, the SIT could be useful as a screening or replacement instrument for the WPPSI when time is an important consideration. It is therefore of value to explore the relationship between SIT and WPPSI scores.

#### Minority Populations

Among special populations, although the SIT has been



found to correlate with the WISC-R, the relationship between these two measures has been low. Rust (1980) assessed 132 1st-8th graders nominated as candidates for gifted programs to determine the relationships among certain behavioral and intellectual characteristics. Records were compiled listing participants' race, sex, age, grade level, SIT IQ scores, Scale for Rating Behavioral Characteristics of Superior Students scores, and WISC-R IQs. Only Ss achieving SIT IQs of 130 or higher were included. A regression equation for the prediction of a WISC-R Full Scale IQ score from a given SIT score was computed and compared to that previously developed for predicting the WISC-R IQ. All variables except SIT IQ were poor predictors of WISC-R IQ scores. A moderate correlation was computed between SIT and WISC-R Verbal and Full Scale IQ scores. A somewhat lower but still significant degree of relationship was found between SIT and WISC-R Performance IQ scores. It was concluded that caution is needed when using the SIT as a screening test for children enrolled in gifted programs.

#### Minority Group Intelligence Test Performance

A relatively common finding is that black children tend to perform poorer on intelligence tests than white children (Terrell, Terrell, & Taylor, 1979). Several explanations have been offered to explain this finding. A cumulative

deficit hypothesis which postulates that, relative to the standardized norms, there is an increasing decrement in intelligence test scores with age, has been proposed to account for the performance of black children on intelligence tests. Jensen (1974, 1977) found that there was little decrement in intelligence in either sample of white and black school children in California, whereas in the Georgia sample the black children, but not the white children, showed significant and substantial decrements in both verbal and nonverbal intelligence. He suggests the decrement of the rural Georgia children was likely associated with the cumulative effects of a poor environment. Layzer (1972), however, argues that if intelligence represents an adaptation to one's environment, a suburban child will have stronger incentives to develop certain cognitive skills than a ghetto child, because the skills assessed by intelligence tests are less relevant to the environmental challenges faced by ghetto-dwellers.

Several arguments have been made against using intelligence tests to assess the mental ability of ethnic minority children as well as Jensen's contention that minority children have poorer mental abilities. One argument against the use of standard intelligence tests is they have a strong white, Anglo-Saxon, middle-class bias.

Recent studies by Bossard, Reynolds, and Gutkin (1980); Hall, Huppertz, and Levi (1977); Reschly and Sabers (1979); and Reynolds and Hartlage (1979) with the WISC-R, Stanford-Binet, PPVT, and Progressive Matrices all indicate that the regression lines for black children and white children and Mexican-American children were similar using the Wide Range Achievement Test scores and other achievement indices as criteria. They also demonstrated that the WISC-R, Stanford-Binet, and Slosson Intelligence Test have excellent concurrent validity for black, white, and, in some studies, Mexican-American and/or American Indian children, using such criteria as the California Achievement Test, Wide Range Achievement Test, Metropolitan Achievement Tests, teacher ratings, Stanford Achievement Test, and California Test of Mental Maturity. This indicates that intelligence tests generally predict equally well for both minority and white children.

Another argument opposing the use of standard intelligence tests with ethnic minority children is that these children may lack test-taking skills, choosing proper problem solving strategies, and balancing speed and power. As a consequence, results obtained using intelligence tests are not an accurate reflection of their mental abilities. There is some research which supports this contention. Johnson (1974) tested the assumption that some ethnic

minority group children express themselves best in spontaneous, unstructured settings, whereas in testing settings they are likely to be more inhibited and found there were few differences between the groups either on the spontaneous speech measures or on the test language measures.

Racial examiner effects are also considered to interfere with assessment of black children. However, twenty-five out of the twenty-nine published studies from 1964 to 1977 dealing with racial examiner effects on individual intelligence tests found no significant relationship between the race of the examiner and the examinee's scores.

Considerations should also be taken into account when testing Mexican-Americans. It is important to consider such factors as cultural practices, bilingualism, speech, rapport, and translation of test items. The WISC-R Verbal, Performance, and Full Scale IQs have been found to be reliable for the assessment of Mexican-American children by Dean (1977, 1979). Sattler (1974) reports that studies almost universally report that Mexican-American children obtain higher Performance than Verbal IQs and attributes this difference to the language differences.

The standardization sample of the WISC-R shows that white children obtained mean IQs one standard deviation

higher than those of the black children (Mean IQs of 102 vs 86). Research using the WPPSI with ethnic minority children has been more variable. Crockett, Rardin, & Pasewark (1976) administered the Metropolitan Achievement Tests three to four years after the WPPSI. They found the only significant correlations were between Mathematics and the Full Scale IQ ( $r = .43$ ) and between Mathematics and the Performance Scale IQ ( $r = .52$ ). Dlugokinski, Weiss, & Johnson (1976), in a study of the validity of the WPPSI with a group of fifty black, thirty-two white, four Hispanic, and one Oriental child, all of whom were of lower socioeconomic status and had been referred to a special setting because of personal and social difficulties, found the WPPSI Full Scale IQ to be significantly associated with gross assessments of speech development ( $r = .61$ ), motor development ( $r = .41$ ), and perceived improvement in a specialized program ( $r = .73$ ).

Henderson and Rankin (1973) found an 18 point difference between the Mexican American children's Verbal and Performance IQs (74 vs 92) in their study, and that the predictive validity of the WPPSI, using the Metropolitan Reading Tests scores as the criterion, was poor ( $r = .27$ ). They suggested that it is ill-advised to use the WPPSI as a routine tool for the identification of children to be placed in special classes. The few studies available on

the predictive validity of the WPPSI with ethnic minority children indicate a need for further research in this area. With the prospect of the WPPSI-R, research will need to begin testing its validity with ethnic minority children as well as white children.

#### Summary and Purpose of the Study

Recently efforts have begun to revise the Wechsler Intelligence test Primary and Preschool Children (WPPSI). When a new scale is developed or an existing measure is revised, research exploring its psychometric properties and the extent to which it correlates with existing measures is essential.

Previous research has shown that the original version of the WPPSI correlates highly with other measures of

intelligence. However, only moderate to low correlations have generally been found between the earlier version of the WPPSI and short measures of intelligence. Since short measures of intelligence are often used situations due to constraints in time and resources as well as in experimental studies as a way of obtaining a general estimate of intelligence, the extent to which the WPPSI-R correlates with commonly used short intelligence tests would be of use. Findings from such research are of value in order to compare an individual or group's performance from one measure to another. Thus one purpose of this

study will be to compare the performance of children on the WPPSI-R with their performance on the Slosson Intelligence Test.

Among minority populations, research has relatively consistently found that minorities score lower on intelligence tests, including the WPPSI, than non-minority children. Several reasons for this finding have been proposed. Some theorists have argued that minority children lack the cognitive skills necessary to perform at a level comparable to non-minority children. Others have proposed that cultural differences reduces minority children's performance on intelligence tests. Still other theorists have maintained that characteristics of the testing session (i.e. race of examiner, utilization of inappropriate reinforcers, and lack of familiarity with the testing situation) interfere with the performance of minority children on these intelligence tests. However, regardless of the reason minority children obtain lower scores than non-minority children, studies exploring the comparability of minority and non-minority students on revised or newly devised tests are important. Such information will aid in the interpretation of these new measures. Since the WPPSI is being revised, no studies exploring the comparability of minority and non-minority test scores on this measure exist. This study is designed

to fill that void. Thus a second purpose of this study will be to explore the comparability of minority and non-minority students' scores on the WPPSI-R. Specifically, the purpose of this study is two-fold.

### Method

#### Participants

Participants for this study consisted of 75 children between 3 and 7 years of age. Of this total sample, 25 children were white, 25 were of Spanish speaking backgrounds, and 25 were of Afro-American decent. Within each of these groups approximately half were males and half were females.

#### Measures

Wechsler Preschool and Primary Scale of Intelligence-Revised (WPPSI-R). This is the Standardization version provided by the Psychological Association. This instrument has been described in detail in an earlier section of this manuscript. A copy of this test has been enclosed in Appendix A. Slosson Intelligence Test. This is an individual intelligence assessment tool consisting of items which are similar in nature to those found in the Stanford-Binet. It was designed to be administered and scored simultaneously, giving it a short administration time (usually 10-30 minutes). In addition, it was designed to



be used for screening or estimating the IQ of a child (see Appendix B).

Background Information Questionnaire. This questionnaire consists of nineteen items which were developed by the Psychological Corporation especially for the purpose of this study. This inventory was developed to obtain information about the children and their parents who participated in this study. A copy of this questionnaire is available in Appendix C.

#### Examiners

Five examiners were used. One of these examiners was white, two others were of Spanish speaking decent, and the remaining two examiners were black. Each examiner had completed at least two courses in assessment.

#### Procedure

Initially, principals at private schools were contacted and asked if students attending their school could participate in this study. For those principals at those schools who agreed, parents were sent a letter requesting their cooperation (see Appendix D), a consent form (see Appendix C), and the Background Information questionnaire. After the consent form and background information questionnaire was returned, the child of that parent was contacted and asked to participate in this study. Those children who agreed were administered all measures

individually by one of the examiners of the same ethnicity. Testing was done in a small, well lit room containing two chairs, and a table. Previous research indicates that administration of the entire test battery requires approximately 3 hours. Therefore each child was given a 10 minute break after approximately every 30 minutes of testing. Further, each child was administered the tests over at least a two day test period.

#### Results

One purpose of this study was to examine the relationship between the WPPSI-R and the SIT to determine if the SIT could be used as a screening device in place of the WPPSI-R, due to the WPPSI-R long administration time. Correlations between each subtest and the SIT were completed. These are available in Table 1.

As can be seen, correlations range from .21 to .42. Thus it seems that the scale which correlates highest with the SIT is Vocabulary and the scale which correlates the lowest is Geometric Design.

The second purpose of this study was to explore the comparability of ethnic groups on the WPPSI-R. Means and standard deviations and F test results for all ethnic groups on all subscales are in Table 2. Results of the post hoc analyses are in Table 3.

Table 1: Correlation Matrix between all subscales of the WIPPI-R and the Slosson Intelligence Test Scores.

Scales*	Information	Geometric Design	Comprehension	Block Design	Arithmetic	Mazes	Vocabulary	Animal Pegs	Picture Completion	Similarity	SIT
Object Assembly	.32	.41	.27	.38	.26	.36	.26	.27	.31	.29	.23
Information	.10	.17	.07	.14	.07	.13	.07	.07	.10	.08	.05
Geometric Design		.31	.36	.27	.41	.22	.27	.23	.36	.24	.26
Comprehension		.10	.13	.07	.17	.05	.07	.05	.13	.06	.07
Block Design			.33	.38	.35	.38	.22	.34	.38	.23	.21
Arithmetic			.11	.14	.12	.14	.05	.12	.14	.05	.04
Mazes				.29	.31	.30	.41	.27	.23	.36	.38
Vocabulary				.08	.10	.09	.17	.07	.05	.13	.14
Animal Pegs					.27	.34	.30	.34	.27	.22	.21
Picture Completion					.07	.12	.09	.12	.07	.05	.04
Similarity						.29	.31	.28	.41	.33	.36
						.08	.10	.08	.17	.11	.13
							.25	.34	.27	.34	.30
							.06	.12	.07	.12	.09
								.27	.22	.38	.42
								.07	.05	.14	.18
									.34	.39	.31
									.12	.08	.10
										.27	.38
										.07	.14
										.37	
										.14	

\*The top line are the subscale correlations while the values below each correlation signifies the percentage of variance shared between the scales.

Table 2: Means, Standard Deviations, and F values for all  
<sup>1</sup>  
 Groups on all Subscales of the WPPSI-R and Slosson.

Scale <sup>2</sup>	White		Black		Mex Amer		F
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Ob Ass	26.08	3.22	19.06	3.78	18.92	3.84	6.09**
Info	21.48	4.57	14.09	5.01	16.69	4.02	9.06**
Geo Des	14.96	2.93	12.33	3.78	13.53	4.72	7.64**
Comp	22.96	7.99	18.14	6.31	15.71	4.38	12.96**
Block Des	19.40	8.47	18.90	7.44	18.97	7.83	N.S.
Arith	16.76	4.04	11.21	4.96	9.06	5.61	8.04**
Mazes	16.40	2.87	14.66	3.92	12.77	3.87	N.S.
Vocab	23.12	8.46	17.16	7.09	12.29	5.73	15.79**
An Peg	18.88	3.19	16.63	4.06	14.01	4.07	5.14**
Pic Com	24.96	5.48	18.91	4.77	15.06	7.01	14.63**
Simil	18.08	6.41	15.19	7.02	12.64	4.90	9.63**
SIT	106.80	11.92	98.64	9.08	90.57	10.04	7.96**

<sup>1</sup>

Children from different socioeconomic levels and geographic regions were used in this study. Additionally, children varied in age. Therefore, the ethnic groups may not have been homogeneous.

<sup>2</sup>

N = 75

\*\* Significant at the .001 level

N.S. = Non-significant

Table 3. Post Hoc Comparisons for all Groups on all Subscales of the WIPPI-R and Slosson\*

	White versus Black	White versus Mex - Amer	Black versus Mex - Amer
Object Assembly	7.02*	7.16*	.14
Information	6.58*	4.79	1.79
Geometric Design	2.63	1.43	1.20
Comprehension	4.82	7.25**	2.43
Arithmetic	5.55*	7.70**	2.15
Vocabulary	5.96	10.83**	4.87
Animal Pegs	2.25	4.78*	2.62
Picture Completion	6.05*	9.90**	3.85
Similarities	2.89	5.44	2.55
SIT	8.16	16.23**	8.07

\*significant at the .05 level; \*\*significant at the .01

level Tukey Critical Values: Obj Ass  $p < .05 = 6.03$ ,  $p < .01 = 7.71$ ; Info  $p < .05 = 5.26$ ,  $p < .01 = 6.23$ ; Geo Des  $p < .05 = 3.97$ ,  $p < .01 = 4.86$ ; Comp  $p < .05 = 5.94$ ,  $p < .01 = 6.71$ ; Arith  $p < .05 = 5.09$ ,  $p < .01 = 6.79$ ; Vocab  $p < .05 = 6.73$ ,  $p < .01 = 8.01$ ; An Peg  $p < .05 = 3.47$ ,  $p < .01 = 4.83$ ; Pic Com  $p < .05 = 6.03$ ,  $p < .01 = 7.46$ ; Simil  $p < .05 = 6.71$ ,  $p < .01 = 7.69$ ; SIT  $p < .05 = 11.07$ ,  $p < .01 = 12.98$ .

As can be seen, differences were found between groups on all the subtests except Block Design. To further explore the source of group differences on the subscales, Tukey's method of post hoc comparisons were performed. However, to avoid redundancy, since significant differences were found on all of the subscales except one, no comparisons between groups were done on Verbal, Performance, and Full Scale scores. These results are available in Table 3.

As can be seen, white children obtained consistently higher scores than Mexican-American and Black children.

#### Discussion

A major weakness of the WPPSI-R and Wechsler intelligence tests in general is that a considerable amount of time is required to administer these measures. In contrast, the SIT can be administered in less than one fourth of the time required for a Wechsler inventory. Therefore, one purpose of this study was to explore the relationship between scores on the WPPSI-R and the Slosson Intelligence Test (SIT) to obtain an estimate of the extent to which intelligence test scores on the SIT could be substituted for WPPSI-R intelligence test scores. Highly significant correlations were found between SIT and WPPSI-R. Further, the Vocabulary subscale of the WPPSI-R was found to correlate highest with the Slosson scores. This indicates that the single most accurate scale for

predicting SIT scores would be the Vocabulary. On the other hand, although significant, the Block Design subscale of the WPPSI-R tended to correlate lowest with SIT scores. This implies that this subscale would be less useful for predicting WPPSI-R test scores. However, no scales share a high level of variance with the SIT. Therefore, based on the results of this study, attempting to estimate one's performance on one measure by the other would have limited clinical or practical utility.

However, this study contains several limitations and it seems premature to conclude that the Slosson may be an inappropriate test for estimating WPPSI-R scores. One limitation is that it was necessary to use raw rather than standard scores due to the standard scores not being available. Another limitation was the use of a non-homogenous age group. The children included ranged in age from 3 years to 5 years. The present study should be replicated when standard scores are made available. Assuming that similar results are found in other studies, results of this study would seem to have at least one major applied implication. That is, it would be inappropriate to rely upon scores using the SIT to estimate WPPSI-R intelligence test scores.

A second purpose of the present study was to compare ethnic differences on the subscales of the WPPSI-R. Mexican

American and Black children were specifically selected because they represent the two largest ethnic minority groups. In general, white children scored significantly higher on all subscales of the WPPSI-R than either Mexican American or Black children. Further, the biggest difference on groups were found on the Vocabulary and Picture Completion subscales of the WPPSI-R. On the other hand, significant but marginal differences were found between groups on Animal Pegs and Mazes subscales.

Previous studies indicate that Black and Mexican-American children tend to score lower on intelligence tests, including the WPPSI, than non-minority children (Sattler 1982). One reason which has been proposed was minority children lack the cognitive skills necessary to perform at a level comparable to non-minority children (Jensen 1977). Others have proposed that cultural differences reduces minority children's performance on intelligence tests (Sattler 1982). Still other theorists have maintained that characteristics of the testing session (i.e. race of the examiner, utilization of inappropriate reinforcers, and lack of familiarity with the testing situation) interfere with the performance of minority children (Johnson 1974). The WPPSI-R attempted to eliminate cultural biases by eliminating and modifying items in the previous version. However, results of this study



indicate that differences between ethnic groups do exist on the WPPSI-R.

It is possible that the reason for these differences may have been due to socioeconomic differences between groups. More precisely, white children were derived primarily from middle- to upper-middle-class families and were enrolled in a private school. In contrast, black children came from lower-middle-class families and were attending a public school while the Mexican-American children came from lower- to lower-middle-class families and were attending a public school. Additional studies comparing ethnic groups of similar socioeconomic backgrounds are recommended prior to considering the possibility of biases in the WPPSI-R or that differences in intelligence exists among different ethnic groups.

Appendix A

Wechsler Preschool and Primary Scale of Intelligence-Revised

**WECHSLER PRESCHOOL AND PRIMARY SCALE  
OF INTELLIGENCE - REVISED  
STANDARDIZATION EDITION**

**DIRECTIONS FOR ADMINISTRATION AND SCORING**

This test is being administered for research purposes. Its confidentiality must be maintained, and no scores may be released to parents or others.

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# WECHSLER PRESCHOOL AND PRIMARY SCALE OF INTELLIGENCE—REVISED

## STANDARDIZATION MANUAL

### Introduction

The *Wechsler Preschool and Primary Scale of Intelligence* (WPPSI) was published in 1967 as a downward extension of the 1949 *Wechsler Intelligence Scale for Children* (WISC). Now, after 20 years of usage, the WPPSI has been revised and the revision (WPPSI-R) is ready for standardization.

The principal goals of the revision are to update the norms and to extend the age range of the scale downward to age 3 and upward to age 7. Other objectives include adding an Object Assembly subtest to the 11 original WPPSI subtests; deleting selected test items that are also on the WISC and its revision, the WISC-R; eliminating or revising any material that is considered dated or biased; and making the test materials more appealing to children.

The WPPSI-R has been tried out experimentally and will now be standardized nationally on a sample of children aged 3 through 7. Before testing any children in the sample, the examiner should read this Manual carefully to become familiar with administration, recording, and scoring practices.

### Standard Testing Procedures

All standardization examiners must be proficient in the individual administration of cognitive tests to young children. The following is a review of general guidelines.

#### Rapport

Establishing and maintaining rapport is essential to good individual assessment. Every effort should be made to ensure that the child is at ease with the examiner and the testing environment. This is particularly important with children who may be fearful and timid with a stranger.

A general but positive introduction to the test can be reassuring to the child. For example, the examiner might mention that the child will be asked to engage in some different tasks that most children enjoy. The child can also be told that some of the tasks will be easy, while others will be more difficult. In addition, examinees may be told that, although they are not expected to answer all the questions correctly, they are expected to try to do their best on all items. The examiner may say something like:

**We're going to be doing some things together. Some of them may be easy and some may be hard. Just do your best.**

Because the test begins with puzzles, most children are easily engaged in the task.

During the test, examiners should be friendly and encouraging but should not provide direct cues that are not specified in the subtest directions. General statements, such as **You're doing fine**, are permitted. However, except where expressly instructed to do so in the Manual, the examiner should never indicate to the child whether he or she has passed or failed an item, even if the child asks directly about his or her performance.

Sometimes children become restless during an examination, and their attention may wander. Should this happen they should be allowed to play or walk about for a few minutes until gentle urging can bring them back to the task. With the exception of the major rest break between the sixth and seventh subtests, testing should not be broken up for more than a few minutes, if possible.

### **Setting**

Testing should take place in a quiet room with adequate lighting. Ideally, the examination should be given at a table low enough that children can work comfortably on its surface. The child should be seated on a chair or bench of such height that his or her feet can rest on the floor. If the child's legs dangle above floor level, he or she should be provided with a footrest of some sort. Preferably, the examiner should sit directly across the table from the child; illustrations in the manual and record form assume that this seating arrangement is used. Where this is not possible, the examiner should be positioned so that full observation of the child's test taking behavior is possible, to facilitate immediate scoring of the child's responses. This is particularly crucial when the subtest calls for pointing or other nonverbal responses.

It is also critical that the examination be conducted in a quiet room that is free from distractions, with no one present but the child and the examiner. Occasionally a child is reluctant to stay alone with an unfamiliar examiner unless his or her parent or teacher is also in the room. In this case the examiner should try reassurance, such as **Teacher will be right in the next room if you want her**.

### **Time of Testing**

Testing should be scheduled in advance with the teacher or other staff so that it does not interfere with special class activities, the child's lunch hour, or other classroom events that are important to the child or staff.

## Organization of the Subtests

In general, the WPPSI-R subtests and materials are quite similar to those of the WPPSI. In order to extend the applicable age range, some new items have been added to the lower and upper limits of some subtests. In addition, the inclusion of the Object Assembly subtest has resulted in WPPSI-R having 12 subtests rather than the original 11 contained in WPPSI. Subtests roughly reflect two domains, verbal and performance, as did the subtests of the WPPSI. Classification of individual subtests into these two domains is shown below:

Verbal Subtests	Performance Subtests
Information	Object Assembly
Comprehension	Geometric Design
Arithmetic	Block Design
Vocabulary	Mazes
Sentences	Animal Pegs
Similarities	Picture Completion

## Testing Time

Administration of the WPPSI-R takes about 1-½ to 2 hours. For the comfort and convenience of both the child and the examiner, testing should be divided into two sessions. A substantial rest break of at least 15 minutes should be given between the sixth subtest (Arithmetic) and the seventh subtest (Mazes). The two testing sessions might be held, for example, on the morning and afternoon of the same day, or be separated by one or two days at most. However, the scale should not be administered over a period of several days unless absolutely necessary. Deviations of any kind, and the reasons for them, must be noted on the Comments page of the Record Form.

## General Directions for Administration

Examiners should follow these general directions.

1. It is important for the examiner to master the details of administration and scoring presented in the Standardization Manual. This will permit the examiner to devote full attention to the child and to present the tasks smoothly.

The directions for each subtest contain the following sections:

**Materials:** The materials needed for the subtest.

**General Procedures:** General information about the organization of the subtest, rules for administration, special features that need attention, timing, recording, and so on.

**Start:** The items at which children of different ages should begin the test.

**Scoring:** How responses and response times are to be recorded and scored.

**Discontinue:** The criterion for stopping the subtest.

**Directions for Administration:** The item-by-item procedures for administering the subtest. Words that are to be spoken by the examiner are printed in **boldface** type.

2. **Order of subtest presentation:** All twelve subtests must be given to each child in the standardization sample. The subtests should be administered in the order in which they appear in the Manual and Record Form. Should a child not cooperate on one of the subtests, proceed with the remainder of the scale and then return to the uncompleted subtest at the end of the session. Note any deviation in the order of administration on the Comments page of the Record Form.
3. **Timing:** A number of subtests have strict time limits for the exposure of stimuli or for the child's performance. Time limits are provided in the Manual and Record Form in minutes and seconds, separated by a colon. For example, a time limit of one minute and 15 seconds will appear as 1:15; a time limit of 45 seconds will be expressed as 0:45. The examiner should follow these requirements exactly. The examiner must have a stopwatch when administering the following subtests: Object Assembly, Picture Completion, Geometric Design, Arithmetic, Block Design, Animal Pegs, and Mazes. Directions for each subtest specify when timing should begin and end, and how the timing should be handled if additional instructions or repetitions of the item are needed.

Young children often express interest in the stopwatch. At the start of the test session the examiner may wish to show the watch and explain briefly what it does. If the stopwatch becomes a significant distraction, however, it may be best to hold the watch out of the child's sight during testing.

Many subtests do not have a stated time limit, and where none is given it is up to the professional judgment of the examiner to decide whether or not a child is going to respond appropriately after a relatively protracted time interval. If the child fails to respond within a reasonable interval, particularly after repetition of a question (if this is appropriate), the examiner should score the item as failed and proceed to the next item, or to the next subtest if the discontinue criteria have been met.

4. **Discontinue Rules:** All the subtests except Animal Pegs have their own rules for discontinuation after a certain number of failures. This prevents the child from becoming frustrated by excessive failures, and also avoids wasting much time when testing younger and less able children. In general, the number of consecutive failures called for before stopping a subtest is intentionally set high, with the expectation that it may be reduced following analysis of the standardization data.

Deciding when to discontinue can be problematic in cases where it is not clear whether a child's response constitutes a failure. In such cases, it is better to continue the subtest and give the child one or two items that should not have been administered than to discontinue the subtest prematurely.

A few of the subtests have subparts with different starting and stopping rules. This is particularly true of the Similarities subtest. Study the administration directions for these subtests carefully before doing any testing.

When determining whether or not to discontinue the Mazes subtest, Mazes 2 through 7 are considered failed only if **both trials** are failed. Similarly, for Block Design each item is considered failed only if **both trials** are failed.

5. **Recording Responses, Test Times, and Test Behavior:** Recording of responses and scores must be done in such a way that scores can be verified. It is particularly important that we be able to understand discrepancies between responses and scores. For example, a child might supply a correct response on a Verbal item of the Arithmetic subtest after the time limit has expired. The item is then scored as a failure. If the examiner writes “(OT)” after the response, we will be able to determine why the response was scored 0. All of the verbal subtests require that the child’s responses be recorded **legibly** and **verbatim**. Do not summarize or abbreviate the child’s answers, for each element of a response may be important in the final determination of an item score. It is imperative that this rule be followed so that item scores can be verified and so that final scoring criteria for some subtests can be developed from actual responses.

For timed tests, the response times must also be recorded. Response times should be recorded in minutes and seconds, separated by a colon. If the time includes less than 10 seconds, record the seconds with a leading zero. For example, a time of one minute and five seconds would be recorded as 1:05.

The Record Form also provides a “Comments” space for each subtest. Use this space to note any unusual behaviors on the part of the child, or difficulties you experienced in administering the subtest.

6. **Querying:** All unclear or ambiguous responses to verbal items are to be queried by neutral probing, such as **What do you mean?** or **Tell me more about it.** Such probes of unclear answers are essential, but the examiner must also avoid excessive questioning. The goal is to clarify unclear responses, not to press children to their limits or inflate their scores. Further, the form of the query is not flexible, but must take the form mandated by the Manual.

The scoring directions in the Manual for three subtests — Comprehension, Vocabulary, and Similarities — include several examples of 0- and 1-point responses that are followed by the notation (Q). This indicates that the response preceding it, or any similar response, should **always** be queried. The examiner should study the scoring rules for these subtests carefully in order to understand the kinds of responses that call for probes.

Whenever a response is queried, examiners should enter a “(Q)” on the Record Form followed by the child’s reply, if any.



7. **Scoring:** The child's responses should be scored according to the standards and examples given in the Manual, and scores should be entered in the appropriate spaces in the Record Form.

When scoring a response that has been queried, all parts of the response, before and after the probe, are evaluated.

If uncertain whether a child's answer is a failure (0 points) or a minimal pass, the examiner should be lenient and assign the lowest passing score.

Some subtests have different starting points for different ages. Where earlier items were not administered, no scoring or marks of any kind should be made for the items that were not administered.

Examiners are not required to compute total raw scores.

8. **Abbreviations:** The following are standard abbreviations that may be used in recording responses.

“(Q)” to note that the examiner asked the child to clarify a response;

“(DK)” to indicate that the child said, “I don't know,” or shook his or her head negatively;

“(NR)” to indicate that the child made no response;

“(R)” to indicate a rotation on the Block Design Subtest;

“(D)” to indicate that a child gave a demonstration of an activity on the Vocabulary Subtest; and

“(OT)” to indicate that the time limit was passed before the child supplied a correct response. This will allow us to know why a recorded correct response was scored as a failure.

No other abbreviations should be used.

## Using the Record Form

**Cover:** Enter all information requested as follows:

1. **Child's Name:** Enter the child's first name, middle name or initial, and last name.
2. **Age:** Enter the date of testing and the child's date of birth by recording the year, number of the month, and the day of the month in the appropriate spaces. Compute the child's age in years, months, and days by subtracting the date of birth from the test date. If the child is tested in two sessions, enter the date of the first session after "Date Tested." To subtract dates, one may have to borrow 30 days (assume that all months have 30 days) from the "Month" column, or 12 months from the "Year" column. In some instances, the examiner will need to borrow from both the "Month" and "Year" columns (as in the following example). Complete accuracy in this computation is essential.

	Year <sup>86</sup>	Month	Day
Example:	Date Tested	<u>87</u>	<u>9<sup>8</sup></u>
	Date of Birth	<u>81</u>	<u>11</u>
	Age	<u>5</u>	<u>9</u>
			<u>21</u>

For the purpose of determining starting points, **age should not be rounded upward.** For example, an age of 4 years 11 months and 29 days should be kept at 4 years 11 months. It should not be rounded upward to 5 years 0 months, even though the child is very nearly that age.

3. **Examiner's Name and Title:** Print the examiner's full name and title.
4. **Test Times:** Record the date and the hour and minute that testing begins. When session one has been finished, write the ending time. Record the date and times for session two in the same manner.
5. **Special:** Use this space to indicate any exceptional characteristics of the child. Examples of exceptionality are: diagnosed physical impairments, such as hearing deficits; behavioral or emotional problems; or enrollment in Special Education programs, such as Learning Disabled or Gifted classes. **Do not** test any child with such a classification until you have first contacted The Psychological Corporation. (See Memorandum 2 to Field Coordinators and Examiners.)
6. **Field Coordinator's Initials:** The Field Coordinator should initial each completed Record Form after it has been checked for completeness and accuracy.

### **Materials to be Supplied by the Examiner**

1. Stopwatch
2. A clock or watch for recording the beginning and ending times of both testing sessions
3. A sheet of cardboard, approximately  $8\frac{1}{2}$ " x 11", to be used for the Geometric Design copying items and the Mazes items if the table at which the child is working does not have a smooth surface

### **Materials Supplied by The Psychological Corporation**

1. Standardization Edition Manual of Directions for Administration and Scoring
2. Record Forms
3. Geometric Design copying forms
4. Mazes booklets
5. 8 Object Assembly puzzles
6. Block Design chips:
  - 6 plastic chips that are red on one side and white on the other side
  - 8 plastic chips that are red on one side and half red and half white on the other side
7. 28 cylindrical, colored wooden pegs
8. Animal Pegs form board
9. Two primary black-lead pencils with erasers
10. Two primary black-lead pencils without erasers
11. Two red-lead pencils without erasers
12.  $8\frac{1}{2}$ " x 11" stimulus booklet containing pictures for the Arithmetic, Information, Vocabulary, and Similarities subtests
13.  $5\frac{1}{2}$ " x  $4\frac{3}{4}$ " stimulus booklet containing pictures for the Picture Completion, Geometric Design, and Block Design subtests

# 1. OBJECT ASSEMBLY

## Materials

8 Object Assembly puzzles, each in a separate bag  
 Manual or clipboard for use as a shield  
 Stopwatch

## General Procedures

For each item, pieces should be arranged behind the Manual or clipboard according to the diagram in the Manual.

Items 1 through 3 require the child to fit pieces into spaces in a "frame". Items 4 through 8 are frameless, freestanding objects.

On Item 1, if the child passes Trial 1, do not administer Trial 2.

On Items 1 and 2, if the child dawdles or seems to be playing with the pieces, say:

**Now HURRY!**

This prompt may only be given once during each of these items, and may not be given at all on Items 3-8.

Examiners must not name the object for the child after Item 2. **NO FURTHER HELP SHOULD BE GIVEN AFTER ITEM 2.**

If the child turns a piece over, turn it right side up again unobtrusively.

**Timing:** The time limit for each item is provided in this Manual and on the Record Form. For each item, timing should begin just after the last word of the directions is given.

Stop timing when the child completes the item (either correctly or incorrectly) and it is clear from the child's words or gestures that he or she is finished. If the examiner is unsure, ask the child if he or she is finished. Starting with Item 2, if the child forgets to tell you that he or she is finished, remind the child to do so on subsequent items.

You may stop the child when the time limit has expired. However, in the interest of maintaining good rapport, it sometimes is unwise to stop a child who is still working when the time limit expires. In such cases the examiner should record the arrangement of pieces at the end of the time limit, as described below. This is important since scores are given for partial arrangements.

**Recording:** Record the exact time the child takes to complete each item, regardless of the child's success, if it is within the time limit. If the child's performance is incomplete or only partially correct at the time limit, circle the X's on the Record Form that correspond to any joins placed correctly.

### Start

All children begin with Item 1.

### Scoring

The score is the number of cuts joined correctly within the time limit. Give credit for each cut juxtaposed correctly. Small gaps or misalignments between pieces are not penalized if the pieces are correctly oriented so that it appears that the child knows where the pieces go. Further, pieces which fit into a frame need not be placed completely into the hole in order to receive credit so long as they are correctly oriented. As an aid to scoring, a diagram of each object is reproduced in the Record Form upside-down, that is, as the examiner would view the child's arrangement if the child were seated directly across from the examiner.

A failure is any performance where no cuts have been correctly joined. Failures are scored 0.

For each item, circle the X's on the diagram in the Record Form that correspond to cuts juxtaposed correctly. Note on the Record Form the details of any arrangement that is hard to score by the scoring criteria.

Special attention should be paid to Item 1. Notice that there are two trials for this item. Many children obtain the maximum score of three points during the first trial and are not administered the second trial. For children who obtain three points on the first trial of Item 1, leave the score column for the second trial blank. When the test is rescored, these children will be given three points credit for the second trial.

Scores for perfect performance on each item are:

Objects with Frames			Objects without Frames		
Item 1.	Rectangles		Item 4.	Clock	1
	Trial 1	3	Item 5.	Teddy Bear	3
	Trial 2	3	Item 6.	Face	5
Item 2.	Flowers	4	Item 7.	Car	2
Item 3.	Sailboat	5	Item 8.	Dog	3

Maximum score: 29 points

### Discontinue

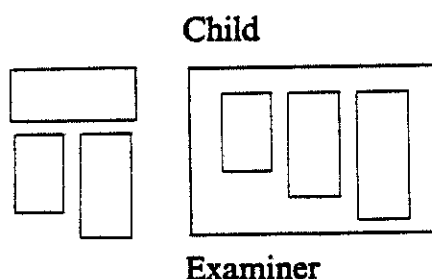
Discontinue after 4 consecutive failures. A failure is any performance scored 0.

## DIRECTIONS FOR ADMINISTRATION

*Starting point for all ages*

### Item 1: RECTANGLES

Using this Manual or a clipboard as a shield between you and the child, arrange the pieces on the table near the child, according to this diagram:



Maximum score: 6 (3 for each trial)      Number of cuts = 3

Then expose the array and point to the three rectangles, saying:

**These pieces will all fit in here.** (Point to the large "frame" piece.)  
**Watch me do it.**

Slowly put the rectangles into the proper holes of the frame, saying,

**We put the big piece in the big hole, then this piece in this hole, and this piece in this hole.** (Pause.) **See, all the pieces fit in.**

Allow the child to look at the completed figure for about 5 seconds. Then say:

**Now I'm going to take the pieces out.**

Remove the pieces from the frame and arrange them as before according to the diagram, using this Manual or a clipboard as a shield. Then expose the array and say,

**Now you put the pieces in.**

Start timing. When the child is through, record the time in minutes and seconds and the number of pieces joined correctly.

Time limit: 2:00

If the child dawdles or seems merely to be playing with the pieces, it is permissible to say,

**Now HURRY!**

This prompt may be given only once during the item.

If the child's assembly is perfect within the time limit proceed to Item 2. Otherwise, administer Trial 2.

**Trial 2:**

Disassemble the child's arrangement. Then slowly demonstrate the correct arrangement again, saying:

**See, they go like this.**

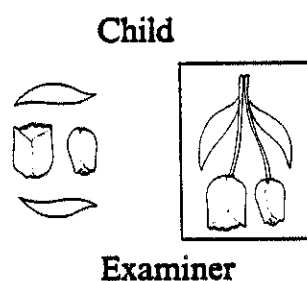
Then remove the rectangles from the frame and rearrange the pieces behind this Manual or a clipboard according to the diagram. Say:

**Now you do it.**

Start timing, and allow 2 minutes. When the child is through, record the time and the number of pieces joined correctly. Then put the pieces away and proceed to Item 2.

**Item 2: FLOWERS**

Arrange the pieces behind the Manual or a clipboard, according to the following diagram:



Maximum Score: 4

Number of cuts = 4

Then expose the array and say:

**These pieces will make a picture of some flowers. Put them together as fast as you can. Tell me when you're through.**

Start timing. When the child is through, record the time and the number of pieces correctly joined.

Time Limit: 2:00

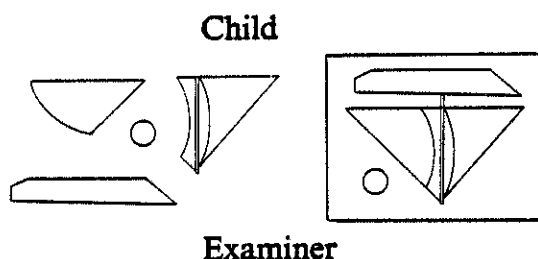
If the child dawdles or seems merely to be playing with the pieces, it is permissible to say:

**Now HURRY!**

This prompt may be given only once during the item. No other help should be given on this or on the following items.

**Item 3: SAILBOAT**

Arrange the pieces behind this Manual or a clipboard, according to the following diagram:



Maximum score: 5

Number of cuts = 5

Then expose the array and say:

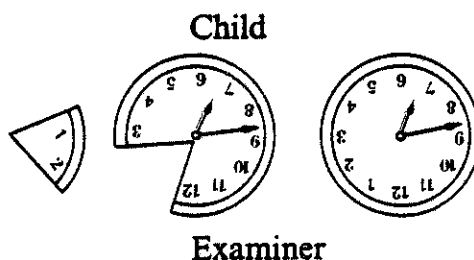
**Put these pieces together as fast as you can. Tell me when you're through.**

Start timing. When the child is through, record the time and the number of pieces joined correctly. (Note that the name of the object is not suggested to the child on this or the remaining items.)

Time limit: 2:00

**Item 4: CLOCK**

Arrange the pieces behind the Manual or a clipboard, according to the following diagram:



Maximum score: 1

Number of cuts = 1

Then expose the array and say:

**When these pieces are together the right way, they will make something. Now you put them together as fast as you can. Tell me when you're through.**

Start timing. When the child is through, record the time and the number of pieces correctly joined.

Time limit: 1:00



**Items 5 through 8**

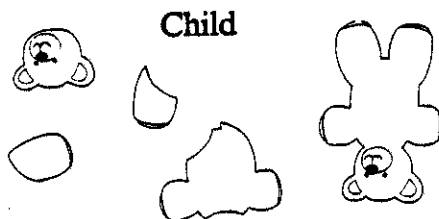
For each item, arrange the pieces behind the Manual or a clipboard, according to the proper diagram below. Expose the pieces and say,

**Now put these pieces together as fast as you can.**

Start timing, and allow the time indicated in the table below.

Item No.	Object	Time Limit
5	Teddy Bear	2:00
6	Face	2:30
7	Car	2:00
8	Dog	2:30

**Item 5: TEDDY BEAR**      Time limit: 2:00

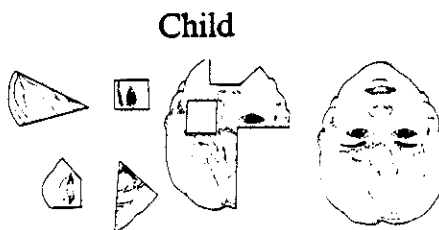


Examiner

Maximum score: 3

Number of cuts = 3

**Item 6: FACE**      Time limit: 2:30



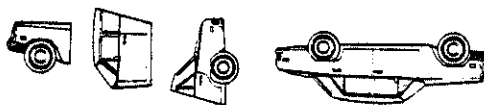
Examiner

Maximum score: 5

Number of cuts = 5

**Item 7: CAR**      **Time limit: 2:00**

**Child**



**Examiner**

**Maximum score: 2**

**Number of cuts = 2**

**Item 8: DOG**      **Time limit: 2:30**

**Child**



**Examiner**

**Maximum score: 3**

**Number of cuts = 3**

## 2. INFORMATION

### Materials

Information booklet

### General Procedures

The Information subtest has two parts with different modes of presentation and response, as follows:

Part 1, Picture Items (Items 1-8): The child responds to an oral question by pointing out the correct picture in an array of objects.

Part 2, Verbal Items (Items 9-30): The child responds orally to oral questions.

For Part 2, responses must be recorded fully and verbatim.

On the Picture items, if the child gives a correct verbal response, give credit for the item, but urge the child to point to the correct picture.

A question may be repeated if the child does not understand it.

If a response to a Verbal item is incomplete or unclear, the examiner may query the child by saying, **What do you mean?** or **Tell me more about it**, but do not ask leading questions.

Only Item 1 is demonstrated, to help the child understand the requirements of the task. If the child gives the correct response to Item 1, say, **That's right, the horse is an animal.** If the child points to an incorrect object or does not respond, say, **Which one is an animal? Point to it.** If the child still does not answer correctly, point to the horse, and say, **This is a horse, and it's an animal.**

### Start

Begin with Item 1 for all children.

### Scoring

One point for each correct response. Essentials of acceptable answers are listed with each item. Where several possible answers are listed (these are separated by three dots), the child needs to give only one to receive credit except where otherwise indicated.

Maximum score: 30 points

### Discontinue

After 6 consecutive failures.

## DIRECTIONS FOR ADMINISTRATION

*Starting point for all ages*

**Part 1, Picture Items (Items 1-8)**

**Item 1**

- Place the picture booklet in front of the child with the unbound edge toward the child.

Open the picture booklet to Card 1 and say,

**Look at these pictures. Point to the one that is an animal.**

If the child points to the horse, say,

**That's right, the horse is an animal,**

and proceed to the next question. If the child points to the wrong picture or does not respond, say,

**Which one is an animal? Point to it.**

If the child still does not answer correctly, demonstrate the correct answer by pointing to the horse and saying,

**This is a horse, and it's an animal.**

*Note: Demonstration is permitted only on Item 1.*

**Item 2** Turn to Card 2 and say,

**Point to the one you cook on.**

**CORRECT RESPONSE:** Stove.

**Item 3** Turn to Card 3 and say,

**Point to the one you eat with.**

**CORRECT RESPONSE:** Spoon.

**Item 4** Turn to Card 4 and say,

**Point to the square.**

**Item 5** Turn to Card 5 and say,

**Now point to what you hear with.**

**CORRECT RESPONSE:** One or both ears.

**Item 6** Turn to Card 6 and say,

**Point to the one that feels cold.**

**CORRECT RESPONSE:** Ice-cream cone.

**Item 7** Turn to Card 7 and say,

**Look at these pictures. Point to the one you read.**

**CORRECT RESPONSE:** Book.

**Item 8** Turn to Card 8 and say,

**Point to the one that can grow.**

**CORRECT RESPONSE:** Plant.

Put the picture booklet aside.

### **Part 2, Verbal Items (Items 9-30)**

Read each question to the child as stated and in the order given. If the child's response is incomplete or unclear, it is permissible to say,

**What do you mean?** or **Tell me more about it,**

but do not ask leading questions. Otherwise, only those prompts provided for an item may be used for this part of the subtest.

Each question may be repeated **once** if the child requests it or appears not to have been paying attention.

For Items 10-30, record the child's answer verbatim in the space provided on the Record Form.

ITEM	ACCEPTABLE RESPONSES
9. <b>Show me your nose. Touch it.</b>	Must touch or point to nose.
10. <b>How many ears do you have?</b>	Two.
11. (Examiner holds up thumb.) <b>What do you call this finger?</b>	Thumb . . . Thumbkin, etc.
12. <b>What do you cut paper with?</b>	Scissors . . . Knife
13. <b>What color is grass?</b>	Green. (If the child gives another color, such as brown, ask, <b>What other color can it be?</b> )
14. <b>What comes in a bottle?</b>	Soda . . . Milk . . . Water, etc. Score as incorrect anything that comes in a jar and not in a bottle (fruit, jam, etc.)

15. **What animal gives milk?** Cow . . . Goat . . . Mother (only if the child means the mother's breast).
16. (Be sure to ask for three animals, as follows.) **Tell me the names of two animals.** (After the child names two, continue.) **Tell me another one.** (If the child names only one, continue to repeat prompt above until the child names three animals or provides an incorrect response.) Child must name three animals to receive credit. (If the answer is a proper name, such as Rusty, say, **What is Rusty?** If the child names fewer than three animal types, say, **Tell me another kind of animal,** until the child has tried to name three.)
17. **What shines in the sky at night?** Stars . . . Moon.
18. **How many legs does a bird have?** Two.
19. **Tell me two things that have wheels.** (Child must name two. If the child names only one thing with wheels, say **Tell me another one.** If the child names two examples of the same concept, such as "car" and "automobile", ask for another kind of thing that has wheels.) Cars . . . Trucks . . . Trains, etc. (Child must name two objects with wheels to receive credit.)
20. **Tell me the name of a vegetable.** Carrot . . . Peas . . . Spinach, etc.
21. **In what kind of store do we buy sugar?** Grocery . . . Food store . . . Supermarket . . . Name of local store (A&P, Kroger, Safeway, 7-11, etc.)
22. **What goes on a letter before you mail it?** Stamp. (If the child says "Name," or "Address," or "Envelope," ask **What else is needed?**)
23. **What do you need to put two pieces of wood together?** String . . . Tape . . . Glue . . . Cement . . . Nails. (If the child says "Hammer," ask, **What else is needed?** If the child says, "Nothing, you just hold them together," ask, **Well, what do you need to make them STICK together?**)
24. **What day comes right after Saturday?** Sunday.

25. **What are shoes made of?** Wood . . . Leather . . . Cloth . . . Plastic . . . Rubber.
26. **How many pennies make a nickel?** Five.
27. **What are the four seasons of the year?** Summer, Fall (Autumn), Winter, Spring. (The child need not give them in this order.)
28. **What is bread made of?** Flour . . . Wheat . . . Meal (only if the child means corn meal) . . . Grain. (If the child says "Dough," ask, **What is dough made of?**)
29. **How many days make a week?** Seven. (If the child says "5," ask, **How many counting the weekend?**)
30. **Where does the sun set?** West. (If the child points, or says, "Behind the mountains," say, **Yes, but what direction is that?**)

### 3. GEOMETRIC DESIGN

#### Materials

Geometric Design booklet  
 Geometric Design copying forms  
 2 black lead, primary pencils with erasers  
 Stopwatch  
 Sheet of cardboard or other firm, smooth surface, if table top is not smooth

#### General Procedures

The Geometric Design subtest contains two parts involving different tasks, as follows:

Part 1, Visual Recognition/Discrimination (Items 1-8): The child is required to point to the one figure in an array that is identical to a key stimulus figure.

Part 2, Visual Reproduction (Items 9-18): The child draws a copy of a stimulus figure.

Regardless of the child's performance on the Visual Recognition/Discrimination items, the Visual Reproduction items are always administered until the child reaches the discontinue criteria for the Visual Reproduction items or finishes the subtest.

Item 1 is a demonstration item to help the child understand the task requirements. If the child chooses the correct response, the examiner should say, **Yes, that's right.** If the child responds incorrectly, the examiner should point out the correct response, saying, **No, THIS is the one. See, these two are just alike** (point in turn to the design at the top, and the correct design).

Hesitant children may be prompted during the Visual Recognition/Discrimination items (Items 1-8) by saying, **Show me which one.**

The identifying information must be completed on each Geometric Design copying form that the child uses.

A smooth drawing surface must be provided for Items 9 through 18. If the table the child is using has a rough surface, place the Geometric Design copying sheets over a piece of cardboard or another firm, smooth surface.

Children who say that they cannot draw the figures in the Visual Reproduction portion of the subtest (Items 9-18) can be encouraged by saying, **Do the best you can.**

Second attempts and erasures are permissible if the child spontaneously makes the alterations. In most cases where the child chooses to make a second attempt, he or she will spontaneously draw on the same part of the copying form where the first attempt was made. The child may also be permitted to turn to the next drawing area on the form and make a second attempt there. In the latter case, the examiner must circle the item



number on the form for the second attempt. Regardless of where the second attempt is drawn, the Examiner must label both drawings so that it is clear which is the first and which is the second attempt. Write a 1 near the first attempt and a 2 near the second attempt. The second attempt is scored.

There is no fixed time for the child to finish copying a design, but if he or she is unable to cope with the task or is producing an unrecognizable copy, remove the card after about 30 seconds, and score the item as a failure.

**Recording Responses:** For Items 1 through 8, a copy of the response array is reproduced on the Record Form as it appears from the examiner's perspective (upside down). Responses are recorded by circling the figure to which the child has pointed. Should you accidentally circle the wrong figure, or should the child spontaneously change his or her response, simply draw an X over the incorrectly circled figure and then circle the figure the child pointed to. If the response is changed due to your error, write an "E" after the array of figures. This will allow us to evaluate the ease of recording responses and to identify the extent to which children spontaneously change their responses. For Items 9-18, it is not necessary to record the child's response since the child's drawings will be available. However, it is important that the item number for each item administered be circled on the form and that second attempts are labeled wherever they occur.

### Start

Begin with Item 1 for all children.

### Scoring

Part 1: 1 point for each correct response. (Maximum score: 8 points).

Part 2: 1 point for each passing design. A design is considered passing if it meets the criterion listed below for that item. Where a second attempt is made, it is the second drawing that is scored. (Maximum score: 10 points.)

**Scoring should be conducted liberally to insure that the test is not discontinued too early.** In general, for purposes of discontinuing any drawing that bears some resemblance to the stimulus should be considered passing. Rotations are to be treated as acceptable responses.

Maximum score for entire subtest: 18 points

### Discontinue

Part 1: Discontinue after 3 consecutive failures; proceed to Item 9.

Part 2: Discontinue after 3 consecutive failures.

## DIRECTIONS FOR ADMINISTRATION

*Starting point for all ages*

### Part 1, Recognition/Discrimination Items (Items 1-8)

#### Item 1

Place the picture booklet in front of the child, with the unbound edge toward the child. Open the booklet to the first card and say,

**Look at this picture.** (Point to the design at the top of the card.)

Then say,

**Now look at these pictures.**

Point in turn to each of the four designs at the **bottom** of the card, and ask,

**Which one of these looks just like this one up here?** (Point again to the design at the top of the card.)

Circle the child's response on the Record Form.

If the child hesitates, say,

**Show me which one.**

If the child makes the right choice, say,

**Yes, that's right.**

If the wrong choice is made, say,

**No, THIS is the one.** (Point to the correct design.) **See, these two are just alike.** (Point in turn to the design at the top, and the correct design.)

#### Item 2

Turn to the second card and say,

**Look at this picture.** (Point to the design at the top of the card.)

Then say,

**Now look at these.**

Point in turn to the four designs at the **bottom** of the card, and ask,

**Which one looks just like this one?** (Point again to the design at the top of the card.)

Circle the child's response on the Record Form.

Wrong choices are not corrected on this or the following items.

### Items 3 - 8

Administer Items 3 through 8 in the same manner as Item 2, then go to Item 9.

### Part 2, Visual Reproduction (Items 9-18)

#### Item 9

Make sure the child has a firm, smooth table surface to work on.

Fill out the identifying information at the top of the form for each form that the child uses.

Begin with Card 9 for all children regardless of their score on Items 1 through 8. Fold one of the Geometric Design copying sheets in half and place it in front of the child so that the space for the identifying information is toward you and away from the child. Just below this space are printed the numbers 9 through 18 which are used to identify the design being drawn. These numbers will be upside down to the examiner when the copying sheet is properly oriented. As an aid in maintaining the correct orientation of the paper, an "E" (Examiner) and an arrow have been printed on each half of both sides of the copying sheet; the E and the arrow should face the examiner. If the child turns the paper either sideways or upside down, note this next to the drawing so that it is clear that the design itself was not rotated.

Provide the child with a primary pencil with a good point and an eraser. Have an extra pencil on hand in case one is broken during the test. Circle the number 9 on the copying sheet and present Card 9 of the picture booklet to the child, just above the folded paper. Say,

**Make one just like this.** (To avoid suggesting on what part of the paper the child is to draw the figure, do not point to any specific location on the paper.)

If, before making any attempt, a child says that he or she is unable to copy a card, say,

**Do the best you can.**

**Passing Criterion:** A single line is present that is reasonably straight. Slight curvature or a break (angle) in the line is permissible. The line does not need to be horizontal.

#### Item 10

When the child has completed the figure for Item 9, turn over the folded sheet so that the E and the arrow are in the same relative position as before. Inconspicuously circle the number 10 on the sheet and present the next card, saying,

**Make one like this.**

**Passing Criterion:** Two reasonably straight lines are present; may point in any direction; should be more nearly parallel than perpendicular; may be of different lengths, or displaced vertically.

After two consecutive designs have been presented, the copying sheet should be refolded to permit the drawing of two additional designs on the reverse side.

### Items 11-18

Continue to present the remaining cards in the same manner, except that when presenting Card 16 (which contains two figures), say,

**Here are two designs together. (Point to them.) Now make both of them just as they are here. Go ahead.**

If the child draws only one unit of the design, say,

**Are you finished?**

No other prompting should be given.

### Passing Criteria (Items 11-18)

- Item 11:** A curved figure with reasonably good closure is present. A small gap or overlap is acceptable.
- Item 12:** Two lines are present that intersect at right angles or nearly so. The two lines must clearly resemble a plus sign more than an "X." Breaks (gaps or angles) in the lines are permissible as long as the figure resembles a plus sign.
- Item 13:** Two lines are present in T-like formation; one end of the vertical line meets the horizontal line and the lines are approximately perpendicular. There is tolerance for a  $\frac{1}{2}$ " gap or overshoot where the lines meet. One line extends at least slightly on both sides of the other line.
- Item 14:** A closed 4-sided figure is present with angles approximately  $90^\circ$ . Lines may be wavy; there may be small gaps or overshoots at the corners.
- Item 15:** Two lines crossing each other are present. Figure must roughly resemble an "X". The lines may be curved or wavy, or unequal in length; the junction may be off-center.
- Item 16:** A recognizable circle and triangle are present, with one vertex of the triangle touching or pointing toward the circle. The circle and triangle are separated or overlap by less than  $\frac{1}{2}$ ".
- Item 17:** An elongated figure with reasonably good closure is present with at least one end-angle distinct; the long sides may be markedly curved or wavy.
- Item 18:** A recognizable square is present that contains an inner square whose corners touch or lie near the sides of the large square. No side of the inner square may be parallel to a side of the outer square.

## 4. COMPREHENSION

### Materials

None, other than Manual

### General Procedures

Read each question slowly to the child, and record the child's response *verbatim*. It is imperative that all responses be recorded *verbatim* so that item scores can be verified.

If the child is distracted or seems to have misunderstood the question, repeat it but do not alter or abbreviate the wording. It is good practice to repeat the question if no response is obtained after 10 or 15 seconds.

Hesitant children may be encouraged with remarks such as:

**Yes, or Go ahead.**

If a response is ambiguous, you must query the child by saying,

**What do you mean? or Tell me more about it.**

The specific scoring guides following each item include several examples of 0- and 1-point responses that are followed by the notation (Q). This indicates that the response preceding it, or any similar response, should **always** be queried.

No other help or prompting should be given except as indicated below for Items 1, 2, and 13.

On Items 1 and 2, if the child does not give a 2-point response, demonstrate a 2-point response as indicated in the directions for these items, below.

On Item 13, the child must give two correct responses to receive full credit. If the child gives only one **correct** answer, ask for a second response, by saying,

**Yes, and give me another reason why houses have windows.**

### Start

All children begin with Item 1.

### Scoring

Record all responses *verbatim*. Each item is scored 2, 1, or 0, depending on the degree of generalization and the quality of the response. For every item, a general scoring guide is provided, followed by typical answers for scores of 2, 1, and 0.

Maximum score: 34 points

### Discontinue

Discontinue after 6 consecutive failures. A failure is a score of 0.

## DIRECTIONS FOR ADMINISTRATION

*Starting point for all ages*

**Item 1: WHAT HAPPENS TO ICE CREAM WHEN IT GETS WARM?**

Note: If the child does not give a 2-point response initially or after questioning, say,

**Well, when ice cream gets warm, it gets soft and melts.**

General scoring criterion: Recognition that it will get soft and melt.

**2 points:** It will melt...Gets soft...Looks like milk, it melts.

**1 point:** It's no good then (Q)...You don't eat it (Q)...Gets sticky.

**0 points:** I cry...You eat it...Eat.

**Item 2: WHAT COULD HAPPEN IF YOU TOUCH A HOT STOVE?**

Note: If the child does not give a 2-point response initially or after questioning, say,

**If you touch a hot stove, you'll get burned.**

General scoring criterion: Recognition of the danger of getting burned.

**2 points:** Get burned...You'd get a burn.

**1 point:** You'd get hurt (Q)...Go to the doctor.

**0 points:** Get in trouble, spanked.

**Item 3: WHY DOES A PLANT NEED WATER?**

General: Understanding that water is necessary for life.

**2 points:** Needs it to live...The plant will die if it doesn't get water...Needs it to grow.

**1 point:** It will get dry...It will get droopy (Q).

**0 points:** It's used to it...To flower (Q)...Looks pretty...It needs it (Q).

**Item 4: WHY DO YOU NEED TO WASH YOUR FACE AND HANDS?**

General: To keep them clean; to avoid germs.

**2 points:** To get clean...So you won't get germs...So you won't look dirty...So you won't get things dirty.

**1 point:** So we can eat (Q)...To look pretty...They're dirty (Q)...So face and hands don't stink.

**0 points:** Mommy tells me to...Mommy makes me.

**Item 5: WHY DO PEOPLE NEED TO EAT FOOD?**

**General:** Understanding that food is necessary for life.

**2 points:** Need food to live...They'd starve without food...To be healthy, strong...To grow...To grow up...So they can get big and strong...To survive.

**1 point:** They'd get hungry...To get muscles.

**0 points:** They want something to eat...So they can have dessert...So they can eat...So I can eat it all.

**Item 6: WHY DO WE NEED CLOCKS?**

**General:** To tell time.

**2 points:** To see what time it is...To tell time.

**1 point:** (Any specific minor reason) To wake up...To tell when it's time to go to school, bed, etc....To tell when it's morning, noon, night etc.

**0 points:** To keep on the wall...To play with.

**Item 7: WHY DO WE WEAR SHOES?**

**General:** To keep our feet warm; to keep our feet dry; to keep our feet clean; to prevent stepping on dangerous objects with bare feet.

**2 points:** So our feet don't get dirty...So we don't get glass in our feet...So your feet don't get cold...You could get sick...So your feet won't get "boobos"...Splinter in foot...Socks won't get dirty.

**1 point:** So you won't step on anything (Q)...So you can go to school.

**0 points:** So you can walk...You have to put shoes on...So you won't get bare feet...Because rain is coming down (Q).

**Item 8: WHY SHOULDN'T YOU RUN AROUND WITH SCISSORS IN YOUR HAND?**

**General:** To avoid the danger of cutting oneself or others.

**2 points:** You could hurt yourself...You might fall and stick yourself...You might poke out an eye.

**1 point:** You ought to be careful with scissors (Q)...Might cut something (Q).

**0 points:** I only use baby scissors.

**Item 9: WHY SHOULD CHILDREN GO TO SCHOOL?**

- General:** To learn what society believes its citizens should know.
- 2 points:** So you can learn what you need...To learn so you can work.
- 1 point:** So you can learn (Q)...So you can get smart (Q)...To learn to read, spell, etc. (Q).
- 0 points:** Because you have to (Q)...To stay out of trouble...To play...  
Because we make so much trouble at home...Because parents have to go to work.

**Item 10: WHAT SHOULD YOU DO IF YOU SEE ONE OF YOUR FRIENDS CRYING?**

- General:** Comfort the friend.
- 2 points:** See if you can help...Make them happy...Say you're sorry...Make them feel better.
- 1 point:** Ask what's wrong (Q)...Tell the teacher, mother, etc....Play with them (Q).
- 0 points:** Tell him he's a crybaby...Be sad.

**Item 11: WHY SHOULD YOU KEEP MILK IN THE REFRIGERATOR?**

- General:** To retard spoilage.
- 2 points:** So it won't go sour...Make it last longer...It lasts better when it's cold...Because it will get bad if you don't.
- 1 point:** Keep it cold (Q)...Won't get warm (Q)...It tastes better when it's cold.
- 0 points:** There might be something wrong with it (Q)...So it'll be clean.

**Item 12: WHY DO CARS HAVE HORNS?**

- General:** To warn or signal pedestrians, animals or other cars.
- 2 points:** To let other people know you're there...To tell another car you want to pass...To warn other cars...So if anyone gets in the way of the car, they'll get out of the way...You could honk at someone who was driving through a red light.
- 1 point:** So nobody will bump a car (Q)...Because you see someone you know...To beep at people (Q).
- 0 points:** When you cross by yourself, the cars will run you over...Two cars crash together.



**Item 13: WHY DO HOUSES HAVE WINDOWS?**

**Note:** The child must give two correct responses to receive full credit. If the child gives only one correct answer, ask for a second response. Say,

**Yes, and tell me another reason why houses have windows.**

**General:** To see out; to let light in; for ventilation. To let you look out...Sun can shine in...Get air...Get cooled off when it's hot.

**2 points:** A response recognizing at least two of the general ideas above.

**1 point:** A response recognizing only one of the general ideas above even after a second response has been prompted.

**0 points:** So the rain (bugs) won't come in...So people won't get cold...To keep the wind out of the house.

**Item 14: WHY IS IT BETTER TO KEEP MONEY AT A BANK THAN AT HOME?**

**General:** Safer; banks give interest on deposits.

**2 points:** So people can't steal it...It couldn't be burned in a fire...You make more money...You won't lose it...So bank can keep an eye on it.

**1 point:** Your sister can't take it from you.

**0 points:** A bank is better...My mommy does it...It's easy to get it from the bank...So you won't get any money...So you don't waste your money...To buy food.

**Item 15: WHY SHOULD YOU GO TO THE TOILET BEFORE GOING TO BED?**

**General:** To prevent bed-wetting or avoid having to get up at night.

**2 points:** So you won't make in the bed...So you don't have to go at night...Because you wet your pajamas...Because you wet your pants...So you won't have to wake someone up to take you to the bathroom.

**1 point:** Because you drink a lot of water (Q).

**0 points:** To go potty (Q)...You've got to go (Q)...To go to the bathroom (Q)...Mommy makes me...So you have to eat dinner...So you won't get bad dreams.

**Item 16: WHY SHOULD YOU STAY HOME FROM SCHOOL WHEN YOU ARE SICK?**

**General:** To avoid spreading infection or to recover from illness.

**2 points:** Other children could catch it...So the class wouldn't get the germs...So you don't cough on other people...If you go out you'll get worse...So you don't get sicker...To get better.

**1 point:** So they won't get a bad cold (Q)...So mother can take care of you...To take them to the doctor...To stay in bed (Q).

**0 points:** So they won't throw up in school...You can't go to school...To take medicine...Because he has a fever (Q).

**Item 17: WHAT HAPPENS TO WATER WHEN IT GETS VERY COLD?**

**General:** Recognition that water freezes.

**2 points:** Freezes...Turns to ice...Turns to snow.

**1 point:** It gets hard (Q)...You slip on it (Q).

**0 points:** You can't touch it...It gets colder...It sinks...It gets rainy...It gets soggy...Can't play in it...You freeze when you drink it...Drink it...Comes out of faucet...We swim in it...Get out of it.

## 5. BLOCK DESIGN

### Materials

6 flat blocks painted red on one side and white on the other  
 8 flat blocks painted red on one side and half red and half white on the other  
 Block Design booklet  
 Stopwatch

### General Procedures

The child works directly from a block model on all but the last 6 designs. The patterns used in setting up models for Designs 1 through 9 are shown on the Record Form, where shaded areas represent red. The patterns for Designs 10 through 15 are printed on separate cards in the picture booklet, and are shown to the child.

For Designs 1 through 5, use the six blocks that are solid red on one side and solid white on the other. For Designs 6 through 15, use the 8 blocks that are solid red on one side and half red and half white on the other side.

In setting up models and presenting designs, make sure that the designs are oriented properly. Construct each model so that the top edge of the design (as printed in the Record Form) faces the child and the lower edge faces the examiner. Note that the reproduction of Design 1 in the Record Form is labeled at the top and bottom to show which side of the design is to face the child and which is to face the examiner. After the directions to the child have been given, the examiner should move the block model to a distance of approximately 7 inches from the child's edge of the table. If the child is right-handed, the model should be placed a little to the left of a line perpendicular to the child's body, and to the child's right if the child is left-handed. Be sure that the child is seated parallel to the edge of the table.

When presenting the design cards in the picture booklet (Designs 10 through 15), make sure the **unbound** edge of the card is toward the child.

Two trials are permitted on every design. If the child succeeds on the first trial, proceed to the next design. If the child fails on the first trial, demonstrate the design and then present the second trial of that design.

Careful attention must be given to the instructions for demonstrating trials. For some designs, both trials are demonstrated, and for others only the second trial is demonstrated. The following table summarizes which trials are demonstrated for each design:

Design	Trial 1 Demonstrated	Trial 2 Demonstrated
1-8	Yes	Yes
9	No	Yes
10	Yes	Yes
11-15	No	Yes

A special column on the Record Form indicates whether a trial should be demonstrated.

In explaining a demonstration, the examiner should use phrases such as,

**I put a red block here...and another red one here...here I have to use a red and white block,**

and so forth.

Timing for each trial begins when the last word of the directions is given. The examiner should stop timing when the child is obviously through, even if the child continues to look at the blocks or neglects to tell the examiner that he or she is finished. It is essential to record the child's performance time for each trial attempted.

If the child correctly completes the design after the time limit, write a "P" followed by "OT" in the pass/fail column of the Record Form and score the design as failed.

**Gaps:** If the child positions the blocks correctly, but leaves definite gaps (1/16" or larger) between them, the examiner should ask,

**Is that right?**

The design is scored correct whether the child closes the gap or not. However, if the child does not close the gap, the examiner should demonstrate proper closure before proceeding to the next trial.

**Rotation of Designs:** The rotation of a design, if less than 30 degrees, is not penalized. However, if the rotation is 30 degrees or more, the design is scored as a failure. A figure on the Record Form and in the Manual illustrates a 30 degree angle. The examiner should make note of such rotations to the left of the trial number in the Record Form. Use the symbol (R) to indicate a rotation of 30 degrees or more.

Regardless of the degree of rotation, the examiner should rotate the blocks to the correct position and say,

**See, it goes this way.**

If a rotation of 30 degrees or more occurs on the first trial of a design, correct the rotation before giving the second trial. If the rotation is less than 30 degrees, the examiner should correct the rotation, but a second trial is not given.

### Start

Ages 3-0 through 5-11: Design 1

Ages 6 and above: Design 6

If a child age 6 or over passes both Designs 6 and 7 on the first trial, go on to Design 8. If the child fails the first trial of either Design 6 or Design 7, administer the second

trial of that item. Whether or not the second trial is passed, administer the earlier items in reverse sequence until the child passes three consecutive items on the first trial. When this criterion is reached continue with Design 7 (if the child failed Design 6) or Design 8 (if the child failed Design 7) unless the discontinue criterion has been met.

In presenting earlier designs to a child age 6 or over who failed Design 6 or 7, it is necessary for the examiner to show the child that the blocks used are different from those used on Designs 6 and 7. Present the blocks for Design 5, using words and gestures provided for Design 1 below.

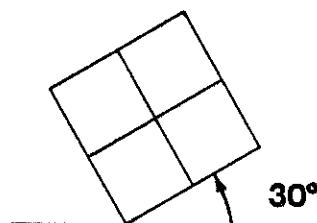
### Scoring

For each design the child receives two points for passing the first trial, one point for failing the first trial and then passing the second trial, and zero points for failing both trials. To be considered passing, the design must be completed correctly within the time limit. To record the child's score, simply circle the 2, 1, or 0 on the Record Form.

Maximum score: 30 points

### Discontinue

After failure on 3 consecutively administered items. A design is considered failed only if **both** trials are failed; thus, if 6 consecutive trials are failed, discontinue.



## DIRECTIONS FOR ADMINISTRATION

### *Starting point for ages 3-0 through 5-11*

For Designs 1 through 5, use the six blocks that are painted red on one side and white on the other.

#### Design 1

Behind a screen positioned 8" to 10" from the child (a piece of cardboard, a clipboard, or this Manual may be used as the screen), arrange a set of two blocks as shown in the diagram of Design 1 on the Record Form. Show the model to the child. Now take two other similar blocks in hand, turn them to show the child the different sides, and say,

**You see these blocks — they are red on one side and white on the other.**

Show both sides of both blocks. Then place them in front of the child. Be sure that the blocks are not in a straight line, and that *one red side and one white side* show. Say,

**I'm going to put them together to look like this.** (Point to the model.) **Watch me.**

Slowly copy the model, explaining each step by saying,

**First, I put a white one here and then another white one next to it. See? Now they look the same.** (Point to the model and your construction.)

After a brief pause, scramble this second arrangement, leaving the model in place. Then rearrange the blocks into their presentation order, with *one red side and one white side* showing. Say,

**Now you make one just like this. Stop when you have one that looks just like this.** (Point to the model.) **Tell me when you finish. Go ahead.**

Start timing and allow 30 seconds.

If the child fails to complete the design within the time limit, or arranges the blocks incorrectly, say,

**No, it should look like this,**

and illustrate by correctly arranging the blocks, explaining each step. Then place the blocks as originally presented, and say,

**Now you do it by yourself. Go ahead.**

Start timing.

Time limit: 0:30 for either trial.

### Design 2

Whether the child fails or passes Design 1, set up the model for Design 2 out of the child's sight. Place two of the remaining blocks in front of the child. (The blocks should not be in a straight line; *two red sides* should show.) Then proceed as in Design 1. If the child does not succeed on the first trial, illustrate the correct arrangement before presenting the second trial.

Time limit: 0:30 for either trial.

### Design 3

Whether the child fails or passes Design 2, set up the model for Design 3 out of the child's sight. Place the three remaining blocks in front of the child so that *one red side and two white sides* show. Then proceed as in Designs 1 and 2. If the child does not succeed on the first trial, illustrate the correct arrangement before presenting the second trial.

Time limit: 0:30 for either trial.

### Designs 4 and 5

Out of the child's sight, construct the model shown on the Record Form, then show it to the child. Taking the three remaining blocks say,

**This time some of the blocks go up and down.** (Point to the model.) **Watch me.**

Assemble the blocks, then say,

**You see, they both look the same.** (Point to the model and to your arrangement.)

Leaving the model in place, scramble the remaining blocks. (Be sure that the blocks are not in a straight line; *two red sides and one white side* should show). Say,

**Now you make one that looks like this** (point to the model.) **Tell me when you are through. Go ahead.**

Start timing and allow 30 seconds.

If the child completes the design correctly within the time limit, go on to the next design. If the child fails the design, give the second trial, with a demonstration.

Time limit: 0:30 for either trial.

*Starting point for ages 6-0 and over*

For Designs 6 through 15, use the 8 blocks that are painted red on one side and half red and half white on the other.

**Design 6**

Take two of the blocks and, out of the child's sight, construct the model shown in the Record Form. Show the model to the child. Then using two other blocks, demonstrate both faces of the blocks, saying,

**Here are two blocks; each is painted red on one side and (pause and stress) red and white on the other side. I am going to put the blocks together to make a design that looks just like this. (Point to the model.) Watch me.**

Assemble the blocks, explaining each step by saying,

**First I put a red and white one here and then I put another red and white one under it. You see, they look the same now. (Point to the model and then to your own performance.)**

Leaving the model in place, scramble the remaining blocks. (Be sure that the blocks are not in a straight line; *one red side and one half red and half white side* should show.) Say,

**Now you make one just like this. (Point to the model.) Tell me when you are through. Go ahead.**

Start timing and allow 30 seconds.

If the child fails to complete the design within the time limit, or arranges the blocks incorrectly, say,

**Watch me again.**

Demonstrate a second time, explaining each step. Then, leaving the model in place, rearrange the blocks into the presentation order and say,

**Now you make one that looks like this. (Point to the model.) Tell me when you are finished. Go ahead.**

Start timing.

Time limit: 0:30 for either trial.

If a child age 6 or over fails the first trial of Design 6, demonstrate the design, allow a second trial, and then, regardless of the child's performance on the second trial, put the blocks away. Then take out the blocks that are red on one side and white on the other, show them to the child as in Item 1 and administer the earlier designs in reverse order beginning with Design 5, until the child passes three consecutive designs on the first trial. When this criterion is reached, go on to Design 7, unless the discontinue criterion has been met.



## Design 7

Set up the model for Design 7 out of the child's sight, then show the model to the child. Place two of the remaining blocks in front of the child. (The blocks should not be in a straight line; *one red side and one half red and half white side* should show.) Then say,

**Now I am going to put the blocks together to make a design that looks just like this.** (Point to the model.) **Watch me.**

Assemble the blocks, explaining each step. Then say,

**You see, they look the same now.** (Point to the model and then to your own performance.)

Leaving the model in place, rearrange the blocks into their presentation order. (Be sure that the blocks are not in a straight line; *one red side and one half red and half white side* should show.) Then say,

**Now you make one just like this.** (Point to the model.) **Tell me when you are through. Go ahead.**

Start timing and allow 30 seconds.

If the child fails on the first trial, illustrate the correct arrangement before presenting the second trial.

Time limit: 0:30 for either trial.

If a child age 6 or over has passed Trial 1 of Design 6, but fails the first trial of Design 7, demonstrate the design, allow a second attempt, and then, regardless of the child's performance on the second trial, put the blocks away and take out the blocks that are red on one side and white on the other. Show the child these blocks, as in Design 1. Then administer the earlier designs, in reverse sequence beginning with Design 5, until the child passes three consecutive designs on the first trial. When this criterion is reached, go on to Design 8 unless the discontinue criterion has been met. When returning to Design 8, after working backward, again take out the blocks that are red on one side and half red and half white on the other and show them to the child before presenting the design.

### Design 8

Use four blocks. Out of the child's sight, construct a model of the design pictured in the Record Form, then show the model to the child. Take the remaining four blocks and scatter them randomly before the child. No special arrangement is required, but be careful that the blocks do not all show the same side when presented. Say,

**Now we have more blocks that are painted red on one side and red and white on the other side. I am going to put the blocks together to make them look like this. (Point to the model.) Watch me.**

After completing the demonstration, scramble the design you have just made but leave the model in place. Put the blocks in front of the child in mixed order, and say,

**Now you make one just like this. (Point to the model.) Tell me when you are finished. Go ahead.**

Start timing and allow 45 seconds.

If the child fails, repeat the demonstration and allow a second trial, saying,

**Now you try it again. Tell me when you are finished. Go ahead.**

Start timing.

Time limit: 0:45 for either trial.

### Design 9

Out of the child's sight, construct a model of the design shown in the Record Form and then show it to the child. Place the remaining blocks in mixed order in front of the child. This time, **without demonstration**, say,

**Now you make one like this. (Point to the model.) Make it all by yourself. Tell me when you are finished. Go ahead.**

Start timing and allow 1 minute and 15 seconds.

If the child fails, demonstrate with explanation. Then scramble the demonstration blocks in front of the child, and say,

**Now you try it again. Tell me when you are finished. Go ahead.**

Start timing.

Time limit: 1:15 for either trial.

*For Designs 10 through 15, use the bound booklet and four of the blocks used in Designs 6 through 9.*

### **Design 10**

Present the card with Design 10 (place the unbound edge 8" to 10" from the child) and say,

**Now I want to see if you can put the blocks together so that they will look like the picture on this card. Watch me.**

Put the blocks together, indicating by gestures and with words that you are being guided by the design on the card. After completing the demonstration, scramble the blocks in front of the child and say,

**Make one like this. Tell me when you are finished. Go ahead.**

Start timing and allow 1 minute and 15 seconds.

If the child fails, repeat the demonstration and allow a second trial.

Time limit: 1:15 for either trial.

### **Designs 11-15**

Present the card and blocks **without demonstration** and say,

**Put these together to make them look like this.** (Point to the card.)  
**Tell me when you are finished. Go ahead.**

Start timing and allow 1 minute and 15 seconds.

If the child fails, demonstrate and explain, and allow a second trial.

Time limit: 1:15 for either trial.

## 6. ARITHMETIC

### Materials

Arithmetic booklet

9 flat square blocks with one of the square surfaces painted solid red

Stopwatch

### General Procedures

The Arithmetic subtest contains three parts involving different tasks, as follows:

**Part 1, Picture Items (Items 1-7):** The child points to an object in an array of objects that illustrates a verbally presented, quantitative characteristic, such as tallest, most, biggest. This part uses the booklet.

**Part 2, Counting Items (Items 8-11):** The child demonstrates numeric knowledge by counting and manipulating blocks.

**Part 3, Verbal Items (Items 12-26):** The child solves arithmetic problems which have been presented orally.

Throughout the subtest, any question may be repeated once at the child's request, or if it is apparent that the child failed to understand the task; however, on timed items, timing should continue. A question may not be repeated more than once.

There are no time limits for Items 1 through 11, but if the child gives no sign of responding after 10 or 15 seconds, indicate this by writing "NR" on the "Child's Response" column of the Record Form, score the item 0, and go on to the next question. For Items 12 through 26, the time limit for each question is 30 seconds. Timing begins at the end of the first reading of the problem.

If the child spontaneously changes an answer, the second response is scored, provided it is given within the time limit on a timed problem. Both responses should be recorded, separated by a slash (/). If the child does not clearly indicate either response, ask,

**Which one do you mean? You said...AND you said...**

Then score the child's final choice. If the child supplies a correct response after the time limit, record the response, followed by "(OT)", and score 0.

Children who are shy or verbally limited in some way may respond to the counting or verbal items by holding up one or more fingers. If a child does this, whether the number of fingers is right or wrong, encourage the child to verbalize the response by saying, **How many is that?** If the child then gives an incorrect oral response, score 0. However, if a child is still unwilling to verbalize the response, but has indicated the correct answer, give credit for the item.

Should a child respond by always pointing to the same part of the card or appear to be guessing, make a note in the "Comments" section of the Record Form.

## Start

Ages 3-0 to 5-11: Item 1

Ages 6-0 and above: Item 8

If a child age 6 or over does not answer all three items, 8-10, correctly, administer Item 11, then administer Items 1 through 7 before proceeding further.

## Scoring

One point for each correct response. For verbal items, if the correct response is given after the time limit, score 0.

Maximum score: 26 points

## Discontinue

After 5 consecutive failures. Do not proceed to any remaining parts not yet administered.

## DIRECTIONS FOR ADMINISTRATION

*Starting point for ages 3-0 through 5-11*

**Part 1, Picture Items (Booklet, Items 1-7)**

**Card 1 — Rabbits.**

Open the booklet to Card 1 and say,

**Here are some rabbits. Which one is the biggest? Point to it.**

**Card 2 — Trees.** Turn to Card 2 and say,

**Here are some trees. Which one is the tallest? Point to it.**

**Card 3 — Books.** Turn to Card 3 and say,

**Here are some books on shelves. Look at the books on this shelf.** (Point to the picture on the extreme left, from the child's point of view.) **Now look at the books on these shelves.** (Point to the pictures of the other shelves.) **Which shelf has more books on it than this one?** (Point again to the picture on the extreme left.)

**Card 4 — Candy Canes.** Turn to Card 4 and say,

**Here are some candy canes. Which is the longest? Point to it.**

**Card 5 — Stars.** Turn to Card 5 and say,

**Here are some boxes with stars in them. Which box has the most stars? Point to it.**

**Card 6 — Children.** Turn to Card 6 and say,

**Here are some children. Which child is the shortest? Show me with your finger.**

**Card 7 — Apples.** Turn to Card 7 and say,

**These bowls have some apples in them. Which bowls have the same number of apples? Show them to me.** (Both must be correctly identified to receive credit.)

*Starting point for ages 6-0 and above*

**Part 2, Counting Items (Blocks, Items 8-11)**

For Items 8 through 11, use the blocks, red side up.

**Item 8 — Counting to 2.** Place two blocks side by side and about  $\frac{1}{2}$ " apart in front of the child, and say,

**How many blocks are there?**

**Item 9 — Counting to 4.** Place four blocks about  $\frac{1}{2}$ " apart in front of the child, in a row, and say,

**How many are there? Count them with your finger.**

If the child stops after counting two or three blocks, say,

**Go ahead, count all of them.**

**Item 10 — Counting to 9.** Place nine blocks about  $\frac{1}{2}$ " apart in a row, and say,

**Count these blocks with your finger.**

If the child stops after counting only some of them, say,

**Go ahead, count all of them.**

**Item 11 —** Keep the nine blocks in a row, and say,

**Now give me all of the blocks except FOUR. Leave four of the blocks here.** (Point to the table top where the blocks are arranged.)

Record the number of blocks left in the row.

Note for Item 11: If the child removes an incorrect number of blocks, say,

**Is that how many you want to leave here?** (Point to the table top where the remaining blocks are.)

Give credit if, on recounting, the child spontaneously corrects the error.

**Part 3, Verbal Items (Items 12-26)**

Read each problem to the child slowly. If the child has momentarily failed to pay attention or seemingly finds the problem too long, the question may be repeated once. However, the timing always begins at the end of the first reading of the problem.

Time: 0:30 for each problem.

Note: If the child raises one or more fingers to answer a question, whether the number of fingers is right or wrong, say, **How many is that?** If a wrong answer is given, score 0. If the child still does not give a verbal response, but has indicated the correct response by holding up the correct number of fingers, give the child credit for the item.

<b>Item</b>	<b>Answer</b>
12. If I cut an apple in half, how many pieces will I have?	2
13. Sue has 3 apples. She eats 2 of them. How many does she have left?	1
14. Johnny has 3 marbles and he loses 1. How many does he have left?	2
15. If you have 2 dollars, and spend 1 dollar for lunch, how much money will you have left?	1
16. How many are 2 books and 3 books?	5
17. Rosa has 9 crayons. Tim has the same number of crayons. How many crayons does Tim have?	9
18. Mary has 4 pennies and her mother gives her 2 more. How many pennies does she have altogether?	6
19. Willis has 5 buttons on his sweater. He loses 2 of them. How many does he have left?	3
20. Barbara has 4 ribbons. She gives 1 to Carol and 1 to Amy. How many does she have left?	2
21. Bob eats 1 piece of candy, Sue eats 2 pieces, and Jack eats 2 pieces. Altogether, how many pieces of candy do they eat?	5
22. If a piece of candy costs 4 cents, how much will 2 pieces cost?	8
23. It takes a half-cup of flour to make a cake. How much flour do you need to make 2 cakes?	1
24. James has 8 marbles and he buys 6 more. How many marbles does he have altogether?	14
25. A store has 11 bicycles and sells 4 of them. How many bicycles are left?	7
26. I have 12 bananas. If I give you half of them, how many bananas will you have?	6

END OF SESSION ONE



## 7. MAZES

### Materials

Mazes booklet  
2 black-lead primary pencils **without erasers**  
2 red-lead pencils  
Stopwatch  
Sheet of cardboard or other firm, smooth surface, if table is not smooth

### General Procedures

A smooth drawing surface must be provided. If the table has a rough surface, the mazes should be placed over a sheet of cardboard or another firm, smooth surface. Throughout the subtest the examiner demonstrates with a red-lead pencil and the child works with a black-lead primary pencil **without an eraser**. Have two of each type of pencil on hand in case one is broken during the test.

The identifying information on the front cover of the Mazes booklet should be completed fully.

Only a single page of the Mazes booklet should be exposed to the child at any one time. To help maintain the correct orientation of the mazes, an "E" (examiner) has been printed on one edge of each page. The arrow next to the E should always point to the examiner.

The examiner should help the child hold the pencil if he or she is having trouble, but **only on the first maze attempted**.

For the young child, the most difficult part of this subtest is understanding the task. For this reason the examiner should indicate by illustration and gesture the meaning of the words employed. Particularly hard for the child is the term "blocked road," for which no simple verbal equivalent seems to be available. Usually the examiner can best convey the idea by appropriate pointing.

Mazes 1A and 1B are omitted. Do not administer these mazes to any children.
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**Cautions:** The following cautions and help may be given only on the first maze administered (Maze 2A for children age 3-0 to 4-11; Maze 5A for children age 5 and above).

1. If the child has difficulty staying within the walls, say,  
**Try not to touch the wall. Stay in the middle of the road.**
2. If the child gets off the road, say  
**You must stay on the road.** (Point.)
3. If the child stops short of the tree, say,  
**Go all the way to the tree.** (Point to the tree.)
4. Help the child hold the pencil if he or she still seems to be having trouble. Only if necessary, complete the path for the child.

The following cautions should be given on any maze if necessary, but each caution may be given only once during the subtest unless the caution is specified in the instructions for an item.

1. If the child stops trying to solve a maze before the time limit is up (e.g., if he or she enters a blind alley and stops, not realizing that reversing directions is permitted), say,  
**Don't stop. Keep going until you find your way out.**
2. If, after crossing a line or entering a blind alley, the child lifts his or her pencil and starts again from the beginning, say,  
**Don't start over. Keep going from here.** (Point to the last place reached.)
3. If the child begins beyond the starting point (i.e., the squirrel or the figure in the center box), say,  
**You should start here.** (Point to the correct starting point.)
4. If the child does not clear the exit completely, say,  
**Go all the way to the tree, or, You must get all the way out,** as appropriate.
5. If, on one of the box mazes (Mazes 8-15), the child begins at the exit and starts to solve the maze by working toward the center box, stop the child and say,  
**You must start here.** (Point to the figure in the center box.)

## Start

Ages 3-0 to 4-11: Maze 2

Ages 5 and above: Maze 5

Maze 5 has two administration procedures: one is used when the maze is the first maze given, and the other is used when the maze is being given after Maze 4. The "starting" version of Maze 5 is presented immediately after the "continuing" version.

If a child age 5 or older does not earn a perfect score on both trials of the first maze given, administer all earlier mazes, beginning with Maze 2.

Mazes 2 and 3 are demonstration items for younger children starting with Maze 2 and for older children who did not pass Maze 5A or 5B. The demonstrations are intended to aid the child in understanding the requirements of the Mazes subtest. Maze 5A is a demonstration item for children age 5 and above who begin with this maze. Concepts demonstrated when presenting these mazes are as follows:

Maze 2 and Maze 5: Staying within the walls of the maze and avoiding blind alleys

Maze 3 and Maze 5: Staying within the walls of the maze when negotiating turns in the maze.

In addition, the three demonstration mazes emphasize that the child should begin at a starting point and work all the way to an end point.

On the first trial of Mazes 2 and 3 (and Maze 5 for children age 5 or older), the examiner demonstrates the first half of the maze by actually drawing the correct path using a red-lead pencil. The child completes the trial and then attempts the second trial without demonstration, in both cases using a black-lead primary pencil without an eraser.

## Scoring

For each trial of Mazes 2 through 7 and for Mazes 8 through 15, record the child's performance time, the number of errors made, and whether the performance is passing or failing.

**Errors:** The only errors counted are entrances into blind alleys, and each entrance into a blind alley is scored as a separate error. An "entrance" is defined as the clear crossing of an imaginary line across the mouth of the blind alley. Any wandering around within the blind alley, or entering one of its branches, is part of the same error. If the tracing returns to the correct path and then reenters the blind alley, score a second error.

*Note: Spontaneously-corrected errors are treated as errors on the Mazes subtest.*

Entrances into blind alleys are scored strictly, and no allowance is made for slips of the pencil due to poor coordination. However, if a child's tracing "grazes" the entrance to a blind alley, and it is not easily discernible whether the alley has actually been entered, no error is scored.

Crossing through the sides of an alley (unless it eliminates a significant portion of the maze), cutting corners, or lifting the pencil, as such, are not counted as errors.

**Pass-Fail:** A maze is failed (scored 0) for any one of the following faults:

1. The number of errors exceeds the number allowed.
2. The time required is greater than the time limit for the maze.
3. The child fails to reach the goal (incomplete performance).
4. The child's tracing begins well into the maze, and beyond the starting point.
5. The child's tracing cuts through a wall to reach the goal, thereby eliminating a significant portion of the maze.

## Discontinue

After failure on two consecutively administered mazes.

**Note:** Mazes 2 through 7 may each include a second trial. For purposes of discontinuing the subtest, Mazes 2 through 7 are considered failed only if both trials of the maze are failed.

## DIRECTIONS FOR ADMINISTRATION

*Starting point for ages 3-0 through 4-11*

### Maze 2 (A and B)

If starting here, enter the identifying information on the front cover of the Mazes booklet.

Place Maze 2A in front of the child with the letter "E" facing the examiner. Say,

**See this little squirrel? (Point.) It wants to get to the tree over here. (Point.) It must stay inside the road and it must not go into a blocked road like this. (Point to the first blind alley.) Watch me. The squirrel starts here and then goes this way.**

Using a red-lead pencil, start at the squirrel and slowly demonstrate how to trace the correct path. Stop at the first blind alley and, without entering it or lifting your pencil, say,

**No, you wouldn't go in here. (Point to the blind alley with your free hand.) It's wrong.**

Continue slowly to the center of the maze. Hand the child the black-lead primary pencil, point to the place where you stopped drawing, and say,

**Now you start here and go on by yourself to the tree. Remember, don't go into any blocked roads. Stay on the road. Be sure to go all the way to the tree. Go ahead.**

Start timing and allow 45 seconds. If the child makes an error or fails the maze, say,

**You made a mistake. (Point to the child's error.)**

Draw the correct path with the red-lead pencil, saying,

**It should be this way.**

Then turn to Maze 2B and say,

**You do this one by yourself. Remember, don't go into any blocked roads. Stay inside the road. Start here. (Make a pencil mark at the squirrel.) Be sure to go all the way to the tree. Go ahead.**

Start timing and allow 45 seconds. Permit the child to continue until the time limit is reached.

Time: 0:45 on either trial

Errors allowed: 0

### Maze 3 (A and B)

Turn to Maze 3A and place it in front of the child. The letter "E" should face the examiner. Say,

**See this little squirrel? (Point.) It wants to get to the tree over here. (Point.) It must stay inside the road, all the way. Watch me. The squirrel starts here and then goes this way.**

Using a red-lead pencil, demonstrate how to trace the path. Start at the squirrel and proceed slowly. Stop at the first turn and without lifting the pencil from the page, say,

**Remember, the squirrel must stay on the road, so it has to go up here.**

Make the turn and continue slowly to the second turn. Say,

**Now the squirrel has to go here, because it must stay on the road.**

Proceed to the center of the maze, then hand the child a black-lead pencil and say,

**Now you do the rest by yourself. Remember to stay on the road and be sure to go all the way to the tree. Go ahead.**

Start timing and allow 45 seconds.

If the child makes an error or fails the maze, stop the child immediately and say,

**You made a mistake. It should be like this.**

Using the red-lead pencil, correct the child's error.

Regardless of the child's success, place Maze 3B in front of the child and say,

**Now do it all yourself. Remember, stay on the road all the way. Start here. (Point to the squirrel.) See how quickly you can do it. All right? Go ahead.**

Start timing and allow 45 seconds. Permit the child to continue without interruption until the time limit is reached.

Time: 0:45 on either trial

Errors allowed: 0

**Maze 4 (A and B)**

Place Maze 4A in front of the child with the "E" facing the examiner. Say,

**Here is a squirrel (point) who wants to go to the tree over here (point). You do this one by yourself. Start here (point to the squirrel) and see how quickly you can get the squirrel to the tree. Remember, you have to stay on the road, and you can't go into a blocked road like this one (point to the blind alley). All right? Go ahead.**

Start timing and allow 45 seconds.

If the child passes Maze 4A, go on to Maze 5A (or 6A, if Maze 5 has already been administered). If the child makes an error or fails the maze, immediately stop the child and say,

**You made a mistake.**

Correct the child's error with a red-lead pencil, saying,

**It should be this way.**

Replace with Maze 4B and say,

**Now do this one by yourself. Remember, stay inside the road, and don't go into a blocked road. Start here. (Point to the squirrel.) Go ahead.**

Start timing and allow 45 seconds. Permit the child to continue without interruption, regardless of the number of errors, until the time limit is reached.

Time: 0:45 on either trial

Errors allowed: 0

**Maze 5 (A and B)** — ages 3-0 to 4-11, continuing from Maze 4

Place Maze 5A in front of the child with the “E” facing the examiner. Say,

**Here's a squirrel who wants to go to the tree over here. (Point.) Start here (point to the squirrel) and get the squirrel to the tree as quickly as you can without going into a blocked road. Now do it by yourself, and be sure to go all the way to the tree. Go ahead.**

Start timing and allow 45 seconds.

If the child passes Maze 5A, go on to Maze 6A. If the child makes an error or fails the maze, immediately stop the child and say,

**You made a mistake. (Correct the error made.) Let's start over again.**

Replace with Maze 5B and say,

**Remember, stay inside the road, and don't go into a blocked road. Start here. (Point to the squirrel.) Go ahead.**

Start timing and allow 45 seconds. Permit the child to continue without interruption, regardless of the number of errors, until the time limit is reached.

Time: 0:45 on either trial

Errors allowed: 0

*Skip to the directions for Maze 6, page 47.*



*Starting point for ages 5 and above*

**Maze 5 (A and B) — if starting here**

Enter the identifying information on the cover of the Mazes booklet.

Open the Mazes booklet, fold it back so that only Maze 5A is exposed, and place it in front of the child. The "E" should face the examiner, and the squirrel and tree should be rightside up from the child's point of view.

Say,

**See this little squirrel? (Point.) It wants to get to the tree over here. (Point.) It must stay inside the road, all the way. And it must not go into a blocked road like this. (Point to the first blind alley.) Watch me. The squirrel starts here (point again to the squirrel) and then goes this way.**

Using the red-lead pencil, demonstrate how to trace the path. Start at the squirrel and proceed slowly. Stop in front of the first blind alley and, without entering it or lifting the pencil, say,

**No, you wouldn't go in here; it's wrong.**

Point with the free hand to the blind alley. Continue to trace the path and stop at the first turn, saying,

**Remember, the squirrel must stay on the road, so it has to go up here.**

Make the turn and continue slowly to the second turn. Say,

**Now the squirrel has to go here, because it must stay on the road.**

Proceed to the center of the maze, then hand the child a black-lead primary pencil without an eraser and say,

**Now you do the rest by yourself. Remember to stay on the road, and don't go into a blocked road. All right? Go ahead.**

Start timing and allow 45 seconds. If the child makes an error, or fails the maze, say,

**You made a mistake here. (Point to the child's error.)**

Then correct the child's error by drawing with the red-lead pencil, saying

**It should be this way.**

Regardless of the child's success, place Maze 5B in front of the child and say,

**Now do it all yourself. Remember, stay on the road, and don't go into a blocked road. All right? Start here.** (Make a pencil mark at the squirrel.) **Be sure to go all the way to the tree. Go ahead.**

Start timing and allow 45 seconds. Permit the child to continue without interruption, regardless of the number of errors, until the time limit is reached.

Time: 0:45 on either trial

Errors allowed: 0

If the child passes both trials of Maze 5, go on to Maze 6. Otherwise, administer Mazes 2 through 4. After administering Mazes 2 through 4, skip to Maze 6 unless the discontinue criterion has been met.

### Maze 6 (A and B)

Place Maze 6A in front of the child and say,

**Here is another one. The squirrel wants to get from here** (point) **to the tree here** (point). **Start here** (point) **and get the squirrel to the tree as quickly as you can. Keep the squirrel on the road, and don't let it go into any of the blocked roads. All right? Go ahead.**

Start timing and allow 45 seconds.

If the child passes Maze 6A, go on to Maze 7A. If the child makes an error, immediately stop the child and say,

**You made a mistake.** (Correct the error made.) **Let's start over again.**

Replace with Maze 6B and say,

**Begin here.** (Point.) **Remember, don't go into any blocked roads. Go ahead.**

Start timing and allow 45 seconds. Permit the child to continue without interruption, regardless of the number of errors, until the time limit is reached.

Time: 0:45 on either trial

Errors allowed: 0

**Maze 7 (A and B)**

Place Maze 7A in front of the child and say,

**See if you can get the squirrel here (point) to the tree over here (point). Now, you start here and get the squirrel to the tree as quickly as you can without going into any blocked roads. Go ahead.**

Start timing and allow 60 seconds.

If the child completes the maze with no more than one error, go on to Maze 8. Should the child make a second error, however, immediately stop the child and say,

**You made a mistake. (Correct the errors.) Let's begin again.**

Replace with Maze 7B and say,

**Remember, don't go into any blocked roads. Go ahead.**

Start timing and allow 60 seconds. Permit the child to continue without interruption, regardless of the number of errors, until the time limit is reached.

Time: 1:00 on either trial

Errors allowed: 1 on Maze 7A, 0 on Maze 7B

**Mazes 8 through 15 (Box Mazes)****Sample**

Present the page containing the Sample box maze. Demonstrate the Sample, saying,

**See this boy in the middle? (Point.) He wants to get out to the street. (Point.) Let me show you how he can do it without getting stuck. Watch me.**

Illustrate, starting from the middle of the center box. On reaching the opening to the blind alley, pause and say,

**No, not this way. You see, he would get stuck by the blocked road. He can't walk through a wall. (Point.) He must go this way to get out.**

Finish the tracing.

**Maze 8**

Turn to Maze 8 and say,

**See if you can get out of this one yourself. Start here (point), and show me how you would get out without getting stuck. Try not to lift your pencil from the paper until you have finished. Go ahead.**

Start timing and allow 45 seconds.

If the child begins outside the center box, say,

**You should start here. (Point.)**

If the child does not clear the exit completely, say,

**You must get all the way out. (Point.)**

(This caution may be mentioned only once for the box mazes.) If the child makes any errors on Maze 8, demonstrate the correct path before proceeding to Maze 9.

Time: 0:45

Errors allowed: 2

**Maze 9**

Present Maze 9 and say,

**Now try this one. Begin here (point) and find your way out without getting stuck. Go ahead.**

Start timing and allow 45 seconds.

Time: 0:45

Errors allowed: 2

**Maze 10**

Point to Maze 10 and say,

**Now try to do this one. Begin here at the girl (point) and find your way out without getting stuck. Go ahead.**

Start timing and allow 45 seconds.

Time: 0:45

Errors allowed: 2

## Mazes 11 through 15

From this point on, merely say,

**Now, start here** (point to the figure) **and find your way out. Go ahead.**

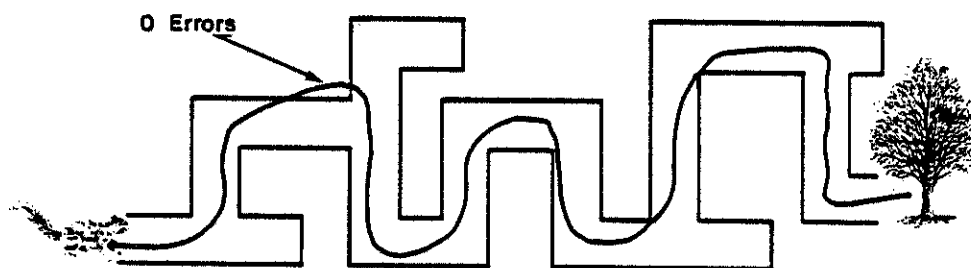
Maze Number	Time In Seconds	Errors Allowed
11	0:45	3
12	1:00	3
13	1:15	4
14	2:15	4
15	2:15	5

### Special Scoring Problems

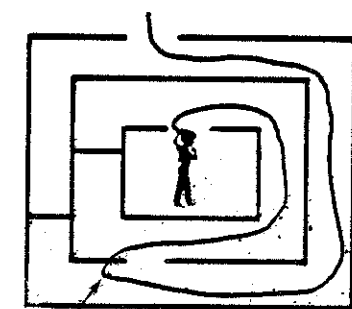
Certain types of performance on the mazes may require clarification of the scoring rules. Examples of such scoring problems are given below.

#### 1. BLIND ALLEY

- a. Although the tracing enters a blind alley at the indicated point, it is considered a consequence of the child's having crossed through the alley wall, and is not counted as an error.

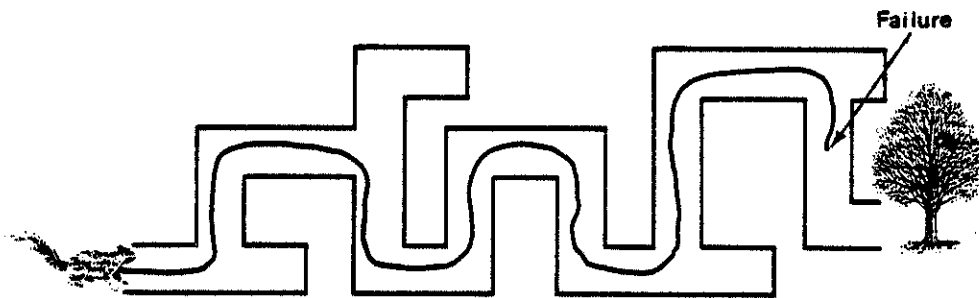


- b. Although the tracing actually enters two blind alleys at the indicated point, it is considered as a slight overshooting of the turn. No error is scored.

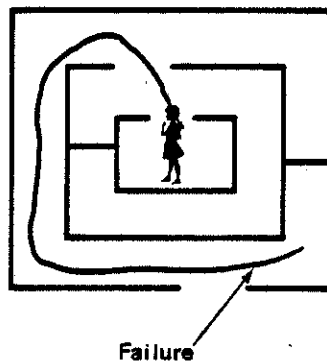


## 2. FALSE EXIT

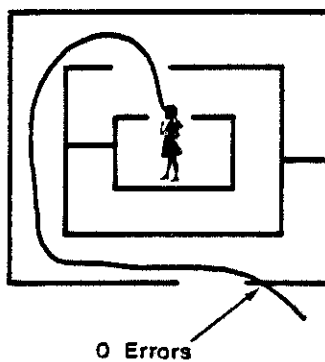
- a. The tracing is correct as far as it goes, but does not clear the exit or even make the final turn. Score as a failure.



- b. Although the tracing misses no part of the correct path through the maze, it enters a blind alley at the exit, and does not actually leave the maze. Score as a failure.

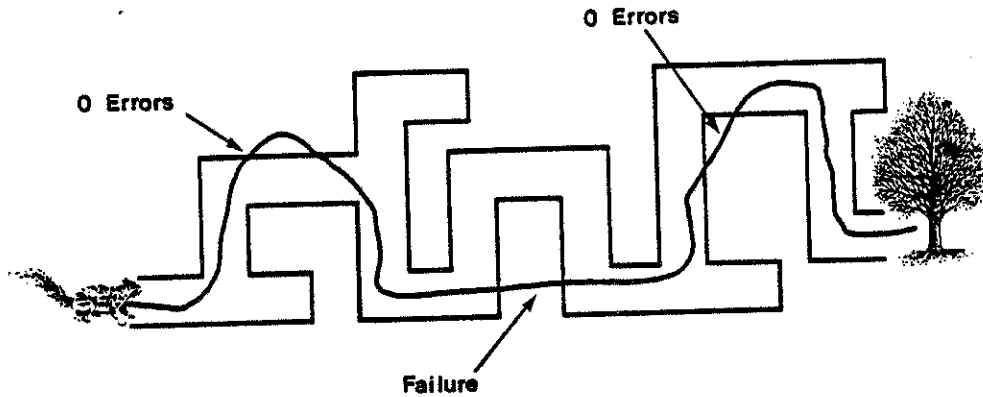


- c. Although the tracing enters a blind alley at the exit, it is not penalized, but is considered as an overshoot of the exit. No error is scored



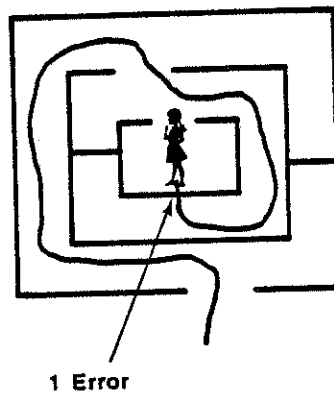
### 3. CUTTING THROUGH AN ALLEY WALL

The illustration below shows that cutting through an alley wall, or cutting a corner, is not penalized unless, by such cutting, the tracing omits a significant portion of the maze.



### 4. FALSE START

Although the tracing does not leave the starting point properly, and cuts through a wall into a blind alley in starting, it does pass through the area just outside the starting point, and omits no portion of the correct path. One error is scored for the blind alley.



## 8. VOCABULARY

### Materials

Vocabulary booklet

### General Procedures

The Vocabulary subtest has two parts which involve different presentation and response modes, as follows:

Part 1, Picture Items (Items 1-4): The child names objects presented in pictures.

Part 2, Verbal Items (Items 5-30): The child produces oral definitions of orally presented words.

All responses must be recorded verbatim.

If a child's response to a Verbal Item is ambiguous, query the child by saying, **What do you mean?** or **Tell me more about it.** Sample responses provided in this Manual that are followed by (Q) and similar responses should **always** be queried.

If a regionalism or slang response not found in dictionaries is given, or if the examiner is in doubt about the acceptability of a response involving a colloquialism, the child should be asked for another meaning.

Responses are sometimes based on homonyms. For example, "gamble" may be defined as if it were "gambol." Definitions of such homonyms, no matter how accurate, are not given credit and the examiner must ask,

**What else does \_\_\_\_\_ mean?**

Do not spell the word for the child.

Only Item 1 is demonstrated following failure to help the child understand the task, and it is demonstrated only if the child gives an incorrect response. If the child does not answer or gives an incorrect response, say,

**This is a cat.**

### Start

Begin with Item 1 for all children.



## Scoring

Part 1: 1 point for each correct response. (Maximum score: 4 points)

Part 2: Each item is scored 2, 1, or 0. (Maximum score: 52 points)

In general, any recognized meaning of the word is acceptable. Elegance of expression is disregarded. However, poverty of content is penalized to some extent; indication of only a vague knowledge of what the word means does not earn full credit. All word meanings recognized by standard dictionaries are acceptable (and scored 2 or 1 according to the quality of the definition). Regionalisms and slang not found in dictionaries are scored 0.

The following general scoring principles should be helpful.

### 2 points

1. A good synonym ("Glow means shine").
2. A major use ("Umbrella is to keep the rain off you").
3. A general classification to which the word belongs ("Knife is a weapon").
4. One or more definitive or primary features ("A letter is talking to someone on paper").
5. Several less definitive but correct descriptive features that cumulatively indicate understanding of the word ("A bicycle has wheels and a handlebar").
6. For verbs, a definitive example of action or causal relations ("Gamble means you play cards for money").

### 1 point

1. A vague or less pertinent synonym ("A moth is an animal").
2. A minor use, not elaborated ("Knife means for to kill people").
3. An attribute that is correct but not definitive, or not a distinguishing feature, if not improved after Q ("Fur is something to keep you warm").
4. An example using the word itself, not elaborated ("A swing - you sit on it and swing").
5. A correct definition of a related form of the word ("Gambler" instead of "Gamble").
6. A demonstration when not elaborated in words (for Bicycle, the child demonstrates riding and pedaling). **This should be indicated by a "D" on the Record Form.**

**0 points**

1. Obviously wrong answers.
2. Verbalisms when no real understanding is shown after Q (“Fur coat”).
3. Responses that are not totally incorrect but which, even after questioning, are very vague or trivial or show great poverty of content.

Examples of 2-, 1- and 0-point responses are listed following each item below. The examiner should study these criteria and examples carefully before administering the test.

Maximum score for entire subtest: 56 points

**Discontinue**

After 6 consecutive failures starting with Item 5. A failure is a score of 0.

## DIRECTIONS FOR ADMINISTRATION

*Starting point for all ages*

**Part 1, Picture Items (Items 1-4)**

**Item 1**

Say,

**I want to show you some pictures.**

Open the picture booklet, point to the first card, and ask,

**What is this?**

Record the child's response verbatim.

**Desired words:** cat, kitten, kitty.

If the child does not answer, or gives an incorrect response, say,

**This is a cat.**

**Items 2-4**

Turn to each card in turn and ask,

**What is this?**

Do not provide the correct answer on any subsequent Picture Items.

Item Number	Desired Word
2	Tree
3	Key
4	Fork

Proceed to Item 5.

## Part 2, Verbal Items (Items 5-30)

### Item 5

Say,

**Now I'm going to ask you what some words mean. We'll start with "knife." What is a knife?**

Record the child's response *verbatim*. (It is imperative that responses be recorded *verbatim* so that item scores can be verified.)

Proceed with the words in the order listed, being sure to phrase the question *exactly* as written below. Make certain that you use local pronunciations of the words. If the child's response is ambiguous, say,

**What do you mean? or Tell me more about it.**

### Items and Sample Responses

#### 5. What is a KNIFE?

2 points: Something you cut with...Silverware, it cuts...A weapon...To stab with.

1 point: Eat with it (Q)...Sharp...Made of steel...Sword (Q)...Has blade and handle.

0 points: I have one...I play with it.

#### 6. What is a BICYCLE?

2 points: (Any two 1-point responses, such as "It has wheels and a handlebar" or a demonstration with a 1-point verbal response.)

1 point: (Demonstrates riding or pedaling) (Q)...Has wheels (pedals, seat, handlebar, etc.)...You ride on it...Ride for fun, gives exercise.

0 points: My daddy is going to get one for me...To play with it...It drives...You fall off it.

#### 7. What is a HAT?

2 points: Wear it on your head...A cap.

1 point: You wear it (Q)...Put it on and take it off (gives appropriate demonstration)...Round and has a top on it (Q).

0 points: They're black...Black hat.

### 8. What is a SHOE?

2 points: Wear it on your foot...You walk in it.

1 point: To wear to school...Put it on (Q)...(Any gesture that convinces the examiner that the child knows a shoe)...It has shoestrings...Stick it on your sock (Q)...For your foot (Q).

0 points: You have some (without demonstration)...It's black:

### 9. What is an UMBRELLA?

2 points: Use it to keep the rain off...Put it over your head when it rains.

1 point: Carry it when it rains...Something for the rain (Q)...Put it over your head (Q)...To keep off the sun (Q)...To put up at the beach...So you won't get wet (Q).

0 points: Big round thing you can fold up (Q)...You carry it...My mother has one at home.

### 10. What is GASOLINE?

2 points: To run your car...Makes an engine go...Used as fuel...Can blow up with a match...Put in cars so they will work.

1 point: To put in a car, in the gas tank...It's oil, used in a car...For the lawnmower...Go get gas at the gas station (Q)...Something you put in your car and pay for...Make fire with it (Q)...It can burn.

0 points: Gas station fixes everything from a car...You play with it.

### 11. What is a LETTER?

2 points: Something you write and mail...Talking to someone put on paper...A note...You mail it...A thing that goes in words...Part of the alphabet...Put it in the mailbox...Something you put a stamp on...Something the mailman brings.

1 point: Something you send to people...People send packages (messages, signals, etc.)...(Any specific letter of the alphabet, such as A)...Something written on paper...You read it...Mommy had in mailbox (Q)...From somebody who wrote you...ABC's.

0 points: A piece of paper...Put your name on it.

**12. What is a LEAF?**

2 points: Green thing that covers a tree...Something you put in a table to make it bigger...A green thing that hangs on a tree...Comes down from tree, turns colors.

1 point: Caterpillars eat them to make them grow (The caterpillar response represents a minor use)...Something you rake up (Q)...Something you see in the springtime (Q)...Part of a plant (Q)...Something that hangs from a tree (Q)...On a tree (Q)...Something that falls from a tree...Something that plants grow with.

0 points: A flower...Falls down (Q)...A feather...A green kind of flower...You hang on a tree...Plant, grows up, tree...It's green (Q).

**13. What does HUGE mean?**

2 points: Very large...Enormous...Giant...Super big...Really big.

1 point: Fat...Big...Large...Like an elephant (Q).

0 points: A mountain (Q)...Ugly.

**14. What is a TYPEWRITER?**

2 points: A machine that you put paper in and push the keys to write a letter...A printing machine...You put paper in there, you type...You can type with, copy words...Type with fingers, get writing on it.

1 point: A machine (Q)...Something that makes a lot of noise when Mommy wants to write a letter...Something that you can do work on, a computer...Something you type papers on.

0 points: It writes (Q)...We have one (Q)...Something you can make a book with (Q)...It has keys...Paper comes out...Something that types (Q).

**15. What does GLOW mean?**

2 points: Shines...Lights up...Is warm and bright...Shows that someone is very excited...Glow in the dark like a nightlight (This is an example using the word itself, with elaboration)...Something that glows in the dark like a star...Something lights in the dark...Gives off light.

1 point: Burning...Red hot...Glow in the dark (Q)

0 points: Glowworm (Q)...Slow...Blow.

16. **What does SWING mean?**

2 points: Something you sit on that goes back and forth...(Any 1-point verbal definition plus adequate demonstration of motion back and forth or striking at an object)...You push it and go high...Bat and ball, you hit it...A board on a rope.

1 point: (Any demonstration of motion back and forth) (Q)...You ride on it (Q)...You sit on it (Q)...You can go high on it (Q)...You push it and it swings.

0 points: To push people...Kids swing on it (Q)...Something to swing on (Q).

17. **What does SNAP mean?**

2 points: Alligator snaps his mouth together...Holds things together like a button...Snap your finger (if child attempts to demonstrate)... When you snap something together, it makes a noise...To grab at something...Snap it, break it (This is an example using the word itself with elaboration)...Something real easy.

1 point: To grab at something (Q)...Trap goes snap...It's on my dress (Q)...A kind of bean...A button (Q)...Bite...Mousetrap snaps you on the nose...What you do with your fingers (Q) without demonstration)...To close your coat (Q)...Say something mean.

0 points: To eat...Snapper turtle...Being mean.

18. **What is a CASTLE?**

2 points: Place where king (queen, princess, knight) lives...Like a house, big, with a bridge...A palace...A fort...A chess piece...Live in it, very big.

1 point: Tall building...Somebody (giants, witches, monsters) lives in it...A tower...For kings (Q)...You build it with sand (Q).

0 points: A building (Q)...A king.

19. **What is FUR?**

2 points: What cats and dogs wear for their coats...Hair on horses and cows and calves and cats...Animals have it, they wear it...A bear has it, furry skin (This is an example using the word itself with elaboration).

1 point: Something to keep you warm (Q)...Animals have it (Q)... Something nice and comfortable on cats and dogs...On doggies.

0 points: A fur coat...Wear it on a coat (Q)...It goes on birds...It's soft (Q).

**20. What is a HOLIDAY?**

2 points: A day we celebrate something special...A vacation...A day off...Don't go to school.

1 point: Christmas, Hannukah, Martin Luther King's Birthday (or any other specific holiday, without elaboration) (Q)...Parties on holiday, get treats...Sunday (Q).

0 points: Birthday (Q)...Monday...Grandma comes.

**21. What does DOUBLE mean?**

2 points: Make twice as large...Two times...Twin...Two things on one cone...Have two...A hit that will get you to second base.

1 point: When you double over when your stomach hurts (Q)...They are alike (Q)...Hit a double.

0 points: Like bubble gum...Up on the double, hurry up...It means hurry...Double trouble.

**22. What is a MOTH?**

2 points: A bug that eats your clothes...Like a butterfly, but doesn't have all different colors...Grows from a caterpillar...An insect with wings...An insect...A bug.

1 point: A butterfly (Q)...It flies around (Q)...An animal (Q)...Eats wool (Q).

0 points: It stings, a kind of wasp.

**23. What is an AUDIENCE?**

2 points: People who watch or listen to something.

1 point: The audience watches the play...People who come to the puppet show...People cheer for you and say yeah (Q).

0 points: When you have to sit still and listen (Q)...Lots of people in the big crowd (Q).



**24. What is a HERO?**

2 points: In the war he fights good, he gets medals...A girl in a story that runs in and saves someone, the main person...Champion, big and strong...Somebody that saves your life.

1 point: Like you do a great favor for your country (Q)...Somebody great...Do good things...He wins a game or he was in a war and shot airplanes...A man that does what another man can't do...Like a TV star or radio star...Supergirl (Q).

0 points: When you win a fight (game, trophy, etc.)...Take more chances...He's a soldier (Q)...You're so strong.

**25. What does POLITE mean?**

2 points: You have manners...Not being rude.

1 point: You say "thank you" (please, may I, etc.)...You don't say mean words...To share food...Don't interrupt...You're quiet when people are talking.

0 points: Like you're being good (Q)...You're nice(Q)...Be sweet (Q)...Don't fight.

**26. What does COURAGE mean?**

2 points: Bravery...When you do something even if you're afraid...When you don't show you are scared...Stand up to danger.

1 point: When you have courage to fight back...When you aren't shy and can ask for something you want...Goes up to the lion.

0 points: Encourage...Tin man needed courage...Man gives the lion courage.

**27. What does ANCIENT mean?**

2 points: Very, very old...A person who lived a long, long time ago.

1 point: An old person...People who lived in Egypt (Q).

0 points: Grandma (Q)...the Bible (Q).

**28. What is a NUISANCE?**

2 points: A pest...A pain in the neck...Something that gets on your nerves...You're being ornery...Nosy, they get in peoples' business.

1 point: You're bad (Q)...Your mother wants you to go outside and play and you don't...Person who is mischievous.

0 points: Not helping your mother...Not grown up.

**29. What is a MICROSCOPE?**

2 points: A thing you see germs with...You use it to see insects, it makes them thousands of times as big.

1 point: It makes small things look bigger (Q) (unless elaborated so as to exclude possibility that the child is describing a magnifying glass)...Something you can look at small things with (Q)...Something that enlarges (Q)...An instrument you see things with.

0 points: You look in and see big things (Q)...Something that brings things closer when you look through it...Something to look through (Q) ... You can see things far away with it.

**30. What does GAMBLE mean?**

2 points: Bet...Trying to win on luck...To try for something without knowing you'll win...When you flip money or bet on things...To take a chance.

1 point: To play with dice...Gamble money (Q)...Trying to win something.

0 points: Cheating on cards...You lose a lot of money, or swindle with it...Gamble in joints and get money.

## 9. ANIMAL PEGS

### Materials

Animal Pegs form board  
Bag of 28 colored cylinders  
Stopwatch

### General Procedures

The Animal Pegs subtest requires the child to place colored pegs into holes according to a key. Timing of the child's performance and recording of the performance time must be precise so that scoring tables can be developed from standardization data.

Each square on the board contains a hole and a picture of one of four animals. The child must associate a color with each animal according to the key at the top of the board and place a small cylinder of the proper color into the hole below each animal.

Before starting the subtest, determine whether the child is right or left handed by asking him or her to pick up an object. Note which hand is used by circling L for left and R for right after "Hand used" on the Record Form. If, during the test, the child switches hands, please note this by also circling the A after "Hand used" on the Record Form.

### Start

All children take the entire test.

### Scoring

Record the exact completion time in minutes and seconds in the proper blanks on the Record Form. If the child has not finished at the time limit, write 5 (OT) in the minutes blank.

Record the number of errors the child makes. An error is the placing of an incorrectly colored peg.

Record the total number of pegs placed in 5 minutes, whether correctly or incorrectly. Record the number of omissions the child makes. An omission is scored if a hole is left empty, including those that the child has not reached by the time limit.

If the child does not finish the task within the time limit, record the number of errors and omissions made, and the total number of pegs placed, in 5 minutes.

Maximum number of errors plus omissions: 20

## Discontinue

After 5 minutes unless the child has finished the entire board before that time.

### DIRECTIONS FOR ADMINISTRATION

Place the board in front of the child. Use the bottom of the cylinder box as a tray. Then place the 28 colored cylinders at the upper right of the board for a right handed child or the upper left of the board for a left handed child.

Speaking slowly and clearly, say,

**Look here.**

Point to the dog in the top row of the board (the "key"), and say,

**Here is a dog.**

Point to the cylinder underneath the dog, saying,

**It goes with black.**

Pointing in the same way, say,

**Here is a chicken. It goes with white.**

Pointing in the same way, say,

**Here is a fish. It goes with blue.**

Pointing in the same way, say,

**Here is a cat. It goes with yellow.**

Say,

**You see, each one goes with a different color.**

Next, point to the first figure in the first row under the key, and say,

**Here is a chicken. It has no color under it, so let's find the right color. The chicken goes with white,**

(point to the key at the top of the board)

**so I'm going to find a white piece and put it in this hole.**

(Insert a white cylinder under the figure.)

**Now look at the fish.**

(Point to the second figure.)

**It goes with blue,**

(again point to the key)

**so I'm going to put a blue one in here.**

(Insert a blue cylinder under the figure.)

**Here is a cat. What color should go here?** (Point to the hole.)

If the child designates a yellow cylinder, say,

**That's right. Put it here.**

If the child makes a wrong choice, point to a yellow cylinder and say,

**It should be a yellow one.**

Wait while the child inserts the correct cylinder, then say,

**Here is a dog. (Point.) You find the color that goes here. If you are not sure, look up at the top**

(point to the key)

**and see what color it should be.**

If the child chooses a black cylinder, say,

**That's right, so put it here. (Point.)**

If the child makes a wrong choice, correct the error as before and wait while the child inserts the correct cylinder.

**Now here is the cat again. Which color goes here?** (Point.)

If the child chooses a yellow cylinder, say,

**That's right.**

If the child makes a wrong choice, correct the error as before and allow the child to insert the correct cylinder.

If the child appears to understand the task, continue the subtest as directed below. If the child does not seem to understand what is expected, first demonstrate the sixth figure, the dog, in the same manner as above. However, no further demonstration is permissible.

After the first five (or six) figures have been completed, quickly remove the cylinders from the board and place them in the tray. Say,

**Now I want you to put the right color under each animal, all by yourself. Start here.**

(Point to the chicken in the first row.)

**Do one right after the other, like this.** (Demonstrate by pointing across the first row.) **When you finish this row, go to the next row.** (Point to the first square on the second row.) **Let's see how fast you can do it. Remember not to skip any. Ready? Begin.**

Start timing at the word "Begin."

If the child hesitates after completing the first row, tell him or her to go on to the next row. If the child loses the sense of the task after the first row, prompt the child one time by saying,

**Look at the top to get the right colors.**

No other help is given, except as indicated below.

Allow 5 minutes. If the child has not completed the task by that time, say,

**Let's stop here,**

and remove the board.

Some children, instead of filling in the holes sequentially, will select cylinders of one color and complete the color before starting on another. If this occurs, caution the child no more than two times by saying,

**Do them one right after the other. Don't skip any,**

and pointing appropriately. If the child continues with his or her own method, permit the child to do so without further interruption, but note this on the Record Form.

Other children, after finishing one row, may remove the cylinders and spontaneously start over again. If a child begins to remove the pegs, say,

**Don't take them out. Just do the rest of them.**

This caution may be given only twice.

If a child appears to be dawdling, it is permissible to say,

**Now, HURRY!**

This caution may be given twice. In any case, timing is not interrupted.

## 10. SENTENCES

### Materials

None, other than Manual

### General Procedures

The Sentences subtest requires the child to repeat verbatim a sentence read aloud by the examiner. After making sure that you have the child's attention, present the sentences in order, reading slowly and distinctly but with natural intonation. Read each sentence only once at the rate of about two syllables per second.

To facilitate development of a scoring system, it is **important to record the child's response verbatim** in the space in which the sentence is printed on the Record Form.

On the first two sentences presented (Sentences 1 and 2 for 3-4 year olds and Sentences 9 and 10 for children 5 and over), second tries are given. Only the first response is scored, however. If the child fails on the first try at any of these sentences, the examiner should say, **No, you say it this way** and present the sentence again in an attempt to get the child to repeat it correctly. A failure is any clearly inadequate response, as defined in the Discontinue section below.

Children will occasionally ask, "What did you say?" In these instances, the examiner should say, **If you're not sure, just guess at it.**

### Start

Ages 3-0 to 4-11: Sentence 1

Ages 5-0 and above: Sentence 9

If a child age 5 or over does not repeat **both** Sentences 9 and 10 perfectly, administer the earlier items in **reverse** sequence beginning with Sentence 8, until the child gives two consecutive correct answers, **not** counting Sentence 9. Then proceed with Sentence 10 or 11 unless the discontinue criterion has been met.

### Scoring

Ignore faulty pronunciation **per se**, but be sure you hear what the child says. For example, articulation errors, such as "cad" for "cat," are acceptable if they are not idea errors. "Boat" for "coat" is unlikely to be an articulation error.

For the purpose of deciding when to discontinue, only errors of omission will be counted. The final scoring system will include four types of errors: omissions, transpositions, additions, and substitutions.

Record the number of omissions for each sentence in the space provided on the Record Form. At present, no score is given. Your verbatim recording of the child's response and your recording of the child's omissions will be used to develop a scoring system for this subtest.

### **Discontinue**

After failure on 4 consecutive sentences. Failure is defined as follows:

Sentences 1-5: One or more words are omitted.

Sentences 6-8: Two or more words are omitted.

Sentences 9-10: Four or more words are omitted.

Sentences 11-15: Five or more words are omitted.



## DIRECTIONS FOR ADMINISTRATION

*Starting point for ages 3-0 through 4-11*

### Sentence 1

After making sure that you have the child's attention, present the sentence, reading slowly and distinctly but with natural intonation, at the rate of about two syllables per second.

Say:

**I'm going to say something, and I want you to say the same thing after me. Say just what I say. Ready? Listen: MY HOUSE.**

If the response is not perfect, say:

**No, you say it this way: MY HOUSE. Now you say it.**

Record both the first and second attempts verbatim but score only the first attempt. Whether the first sentence is repeated correctly or not on the first or second attempt, present the second sentence.

### Sentence 2

Say:

**Listen, say just what I say. Ready? FISH SWIM.**

If the response is not perfect, say:

**No, you say it this way: FISH SWIM. Now you say it.**

Record both the first and second attempts but score only the first attempt. Whether the second sentence is repeated correctly or not on the first or second attempt, go on to the third sentence.

### Sentences 3-15

Present the third sentence and the remaining sentences, by saying,

**Listen, say JUST what I say. Ready?**

Once the child appears to understand the requirements of the subtest, sentences may be introduced by a phrase such as: **Now let's try this one. Ready?**

*Starting point for ages 5-0 and older***Sentence 9**

After making sure that you have the child's attention, present the sentence, reading slowly and distinctly but with natural intonation, at the rate of about two syllables per second.

Say:

**I'm going to say something, and I want you to say the same thing after me. Say just what I say. Ready? Listen:  
THE BAD DOG RAN AFTER THE CAT.**

If the response is perfect, go on to Sentence 10.

If the response is not perfect, say:

**No, you say it this way: THE BAD DOG RAN AFTER THE CAT.  
Now you say it.**

Record both the first and second attempts verbatim. Only the child's first attempt is scored. Whether or not the sentence is repeated correctly on the second attempt, administer the earlier items in reverse sequence until the child gives two consecutive perfect answers. Then proceed with Sentence 10, unless the discontinue criterion has been met. In introducing Sentence 8 for a child whose performance on Sentence 9 was not perfect, say,

**Now say just what I say. Ready? Listen: MARY HAS A RED  
COAT.**

**Sentence 10**

Say:

**Now, say JUST what I say. Ready? Listen: SUSIE HAS TWO  
DOLLS AND A BROWN TEDDY BEAR.**

If the response is perfect, go on to Sentence 11.

If the response is not perfect, say:

**No, you say it this way: SUSIE HAS TWO DOLLS AND A  
BROWN TEDDY BEAR. Now you say it.**

Record both the first and second attempts verbatim.

If a child aged 5 or older has repeated Sentence 9 perfectly, but does not repeat Sentence 10 perfectly on the first try, administer the second trial. Then administer the earlier items in reverse sequence starting with Sentence 8, until the child gives two consecutive perfect answers, not counting Sentence 9. Then proceed with Item 11 if the discontinue criterion has not been met.

**Sentences 11-15**

Present Sentence 11 and the remaining sentences, saying,

**Listen, say JUST what I say. Ready?**

Once the child appears to understand what is required, sentences may be introduced by wording such as: **Now let's try this one. Ready?**

**Sentences**

1. **My house.**
2. **Fish swim.**
3. **Bill is happy.**
4. **Cows are big.**
5. **Mommy works hard.**
6. **The bird is here.**
7. **We sleep at night.**
8. **Mary has a red coat.**
9. **The bad dog ran after the cat.**
10. **Susie has two dolls and a brown teddy bear.**
11. **It is very nice to go to a camp in the summertime.**
12. **Peter would like to have new boots and a cowboy suit.**
13. **Eating too much cake and candy can give you a stomachache.**
14. **The heavy rain which fell last night made many buses late for school.**
15. **Next Monday our class will visit the zoo; bring your lunch and be sure to be on time.**

# 11. PICTURE COMPLETION

## Materials

Picture Completion booklet  
Stopwatch or watch

## General Directions

With the exception of the Sample Item, all of the pictures in this subtest have some essential portion missing. The cards are presented to the child in numerical order, and the child is asked to name or indicate the missing part on each card.

For Items 1 through 5, permissible prompts are listed below in the Directions for Administration. Beginning with Item 6, no help is given except as specifically indicated below.

If the meaning of the child's verbal response is ambiguous, ask the child to point to the missing part by saying, **Show me where you mean.** The response "hand" or "arm" to Item 30 (Watch) should **always** be confirmed by pointing, to make sure that the child means the hand of the watch, not the hand or arm of the wearer.

If the child merely names the pictured object, say:

**Yes, but what is MISSING?**

**This prompt may be provided a total of only two times during Items 6 - 38.**

If the child mentions a part which is off the card (such as the body of the girl in Item 16), say:

**A part is missing IN the picture. What is it that is missing?**

**This prompt may be provided a total of only two times during Items 6 - 38.**

Exposure time: There is no time limit for each item. However, examiners must allow each child a minimum amount of time in which to make a response. If the child shows no sign of responding within the times listed below, score the item as failed and proceed to the next item.

Sample Item and Items 1-3	15 seconds
Items 4 - 38	20 seconds

For Items 1 through 5, if the child has not responded by the end of the 15 seconds, give the prompts provided below with each item.

If the child quickly says "I don't know" to an item, encourage the child by saying something like **Try it a little longer** or **Keep trying.** If the child has still not responded by the minimum times listed above, score the item as failed and go on to the next item.

### Start

Ages 3-0 through 4-11: Sample Item

Ages 5-0 and above: Item 4

If a child age 5 or over fails Item 4, administer the Sample Item and Items 1 through 3 before proceeding to Item 5.

### Scoring

One point for each correct response.

In some of the more difficult pictures, the child may not know the exact name of the missing part, and may use a close synonym for it. Thus, in the case of Item 32 (Rooster), a child may give the missing part as "the spike" or "the thing he fights with." Such responses are scored as correct.

If a child does not give a verbal response but points correctly to the missing part, credit is given when the examiner is certain that the child knows which part is missing. If the child points to the right place but spoils the response by making a verbal response that is clearly incorrect, the item is considered failed. For example, on Item 20 (Table) the child may point toward the missing leg and say, "The chair is missing."

Maximum score: 38 points

### Discontinue

Beginning with Item 6, discontinue after 7 consecutive failures.

## DIRECTIONS FOR ADMINISTRATION

*Starting point for ages 3-0 through 4-11*

### Sample Item

Place the picture booklet in front of the child with the unbound edge toward the child. Open the booklet to the Sample Item and say,

**Show me the Teddy Bear.**

If the child hesitates, say,

**Show me the bear. Point to it.**

Allow the child at least 15 seconds to respond. Regardless of the child's response, go on to the next item.

### Item 1

Turn to the next page (Item 1) and say,

**Here is the Teddy Bear. (Point.) But an important part is gone.  
Tell me what's missing.**

If after 15 seconds the child does not say the head is missing, say,

**Something is missing. Point to it.**

If the child merely names the bear, say,

**Yes, but what is MISSING? (Point.)**

If the child still does not respond correctly, say,

**Look, the bear's head is missing. (Point.)**

### Item 2

Turn to Item 2 and say,

**Now what is the bear missing? Show me.**

Allow the child at least 15 seconds to respond. If the child shows no sign of responding or gives an incorrect answer, say,

**See, it only has a head. The bear's body is missing. (Point.)**

### Item 3

Turn to Item 3 and say,

**Look at the bear again. What is it missing now?**

Allow the child at least 15 seconds to respond. If the child shows no sign of responding or gives an incorrect answer, say,

**Look at the Teddy Bear and show me what's missing.**

If the child still does not respond correctly, say,

**See, a leg is missing. (Point.)**

If the child mentions a part which is off the card (as the body of the girl in Item 16), say,

**A part is missing IN the picture. What is it that is missing?**

This prompt may be provided twice during Items 6-38.

Pictures	Missing Parts	Pictures	Missing Parts
Sample. Teddy Bear	(None)	22. Ruler	Number 5
1. Teddy Bear	Head	23. Airplane	Engine (Rocket)
2. Teddy Bear	Body	24. Clothesline	Clothespin
3. Teddy Bear	Leg	25. Car	Headlight
4. Comb	Tooth	26. Swing	Knot (Stick)
5. Doll	Arm	27. Coat	Buttonholes
6. Rain Child	Boot (Shoe)	28. Door	Hinge
7. Jacket	Sleeve	29. Lunchbox	Part of latch (Closing)
8. Balloon Man	Balloon	30. Watch	Minute hand (If the child says, "Hand" or "Arm," say, <b>Show me where you mean.</b> )
9. Tracks	Section of track	31. Shoes	Heel
10. Tricycle	Handlebar	32. Rooster	Spur
11. Flowers	Stem (Stick)	33. Scissors	Screw
12. Rabbit	Ear	34. Duck	Web of foot (If the child says, "The foot," say, <b>Show me where you mean.</b> )
13. Wagon	Wheel (Tire)	35. Screw	Slot
14. Ladder	Rung	36. Girl Running	Sock (Stocking)
15. Swing Set	Seat (Slat)	37. Girl's Profile	Ear
16. Girl's Face	Mouth (Lips)	38. House	Shadow of the tree (If the child says, "The shadow," say, <b>Show me where you mean.</b> )
17. Hand	Fingernail (Polish)		
18. Child at Desk	Chair (Seat)		
19. Pigtails	Ribbon (Bow)		
20. Table	Leg		
21. Clock	Number 3		



## 12. SIMILARITIES

### Materials

Similarities booklet

### General Procedures

The Similarities subtest contains three parts which have different modes of presentation and which require different types of responses from the child. These parts are as follows:

Part 1, Picture items (Items 1-7): The child chooses from an array the one object which is similar to the objects in another array.

Part 2, Sentence Completion items (Items 8-15): The child provides a word to complete a sentence in a way that shows understanding of the similarity concept indicated in the main body of the sentence. Both presentation of the incomplete sentence and the child's response are oral.

Part 3, Verbal Analogy items (Items 16-23): Pairs of words are presented orally and the child tells how the words are similar.

On Parts 2 and 3, the child's responses must be recorded *verbatim*.

If the child's response to a Verbal Analogy Item is unclear or ambiguous, say, **What do you mean?** or **Tell me more about it.** The specific scoring directions for the Verbal Analogy items include several examples of 0- and 1- point responses that are followed by the notation (Q). This indicates that the response preceding it, or any similar response, should **always** be queried. The first one or two items of each part of the subtest are demonstrated following failure, to help the child understand the requirements of the task. The following items are demonstrated:

Item 1 (Picture item): The child is told if his or her response is correct. If it is not correct, the correct response is demonstrated by the examiner.

Item 8 (Sentence Completion item): If the child's response is incorrect, the examiner furnishes the correct response.

Items 16 and 17 (Verbal Analogy items): If the child does not give a 2-point response, one is provided by the examiner. The scoring of 2-, 1-, and 0-point responses is explained below. Specific wording for demonstrations is given in the Directions for Administration.

### Start

Begin with Item 1 for all children. Regardless of the child's performance on Part 1, begin Part 2 and continue until the discontinue criterion has been met.

## Scoring

Part 1: 1 point for each correct response. (Maximum score: 7 points)

Part 2: 1 point for each correct response. Acceptable responses are given below with each item. (Maximum score: 8 points)

Part 3: Each item is scored 2, 1, or 0. The general scoring principles for scores of 2, 1, or 0 for any item are as follows:

2 points: Any major classification that is pertinent for both members of the pair.

1 point: Any specific property common to both that constitutes a minor similarity.

0 points: Specific properties of each member of the pair, generalizations that are not pertinent, or differences.

Sample answers are given following each item to facilitate scoring this subtest accurately. (Maximum score: 16 points).

Maximum score for entire subtest: 31 points

## Discontinue

Part 1: After 3 consecutive failures. **Important:** Administer Part 2 (Items 8-15) regardless of the child's performance on Part 1.

Parts 2 and 3: After 5 consecutive failures beginning with Item 9. (A failure is a score of 0.)

## DIRECTIONS FOR ADMINISTRATION

*Starting point for all ages*

### Part 1, Picture Items (Items 1-7)

Place the picture booklet in front of the child with the unbound edge toward the child.

#### Item 1

Open the booklet to Card 1, point to the three flowers shown at the top of the card (from the child's point of view), and say,

**Look at these pictures. They're all alike — they all go together.  
Now look at THESE pictures.** (Point to the four pictures at the bottom of the card.)

Then say,

**Which one is like these?** (Point to the flowers at the top of the card.)  
**Show me.**

If the child points to the correct choice of the flower at the bottom of the card, say, pointing appropriately,

**Yes, these are all flowers, and this one is a flower, too.**

If the child makes a wrong choice or does not respond, say,

**Look up here.**

Point to the top of the card.

**These are all flowers.**

Then point to the flower at the bottom of the card and say,

**This one is like these because it is a flower.**

Point again to the top of the card.

**Item 2**

Turn to Card 2 and say,

**Now look at these pictures. Which one here** (point to the figures at the bottom of the card) **is like these?** (Point to the figures at the top of the card.) **Show me.**

If the child hesitates or does not respond, prompt a response by saying,

**Remember, these pictures** (point to those at the top of the card) **are like each other. You want to find which one of these** (point to the figures at the bottom of the card) **is like them. Now, which one here** (point to the figures at the bottom of the card) **is like these?** (Point to the figures at the top of the card.)

Do not demonstrate the correct answer.

**Items 3-7**

For the remaining items, 3 through 7, expose the pages, point to the figures at the bottom of the card, and ask,

**Which one of these is like these?** (Point to the figures at the top of the card.)

Do not demonstrate the correct answers.

The items and their correct responses are shown below.

Item Number	Correct Response
1	Flower
2	Triangle
3	Horse
4	Socks
5	B
6	Can
7	Scrub brush

**Part 2, Sentence Completion Items (Items 8-15)**

**Item 8**

Say,

**Now I'm going to tell you something that is not finished.  
I want you to finish what I say. You wear shoes and you  
also wear \_\_\_\_\_.**

Read the question slowly with an upward intonation and appropriate pause at the end.

Answer to Item 8: Socks, sneakers, shirt, any other clothing.

If the child does not seem to understand Item 8 or answers it incorrectly, repeat the question and supply the correct answer thus:

**You wear shoes and you also wear...socks.**

**Items 9-15**

Items 9 through 15 may each be repeated once without providing the correct answer. No further help may be given.

Items 9-15 should be introduced by saying, **Let's try another one.**

9. **You ride in a train and you also ride in a \_\_\_\_\_.**

Answer: Car, wagon, plane, bicycle, horse, subway, boat, etc.  
(Score 0: Caboose, seat.)

10. **You walk with your legs and throw with your \_\_\_\_\_.**

Answer: Arm or arms, hand or hands.

11. **Bread and meat are both good to \_\_\_\_\_ .**

Answer: Eat, make a sandwich.

12. **You touch with your fingers and you smell with your \_\_\_\_\_.**

Answer: Nose.

13. **You write with a pencil and you also write with a \_\_\_\_\_.**

Answer: Pen, chalk, typewriter, crayon, etc.

14. **Boys grow up to be men and girls grow up to be \_\_\_\_\_.**

Answer: Women, ladies, mothers, wives.

15. **A knife and a piece of broken glass both \_\_\_\_\_.**

Answer: Cut, are sharp.

(If the child says, "Are dangerous," say, **How are they dangerous?**)

Part 3, Verbal Analogies (Items 16-23)

Item 16

Say,

**How are a COAT and a SWEATER alike?**

If the child says that they are not alike, fails to respond, or gives a 0-point answer, say,

**You can wear them both, they're both clothes, they keep you warm, and so on.**

If the child gives a 1-point answer, the examiner must give examples of a 2-point response to help the child understand the task. For instance, if the child answers, "They're both warm", say,

**That's right, they're both warm. And you wear them both, and they're both kinds of clothes.**

Item 17

Say,

**How are a spoon and a fork alike?**

If the child fails, say,

**They are both things you can eat with.**

If the child gives a 1-point answer, give examples of a 2-point response. For example, if the child answers "They are both made of metal," say,

**That's right, they're both made of metal. And they are things that you can eat with.**

Note: This kind of help may be given only for 0- or 1-point responses to Items 16 and 17.

Items 18-23

Read the questions slowly, saying,

**How are a \_\_\_\_\_ and a \_\_\_\_\_ alike?**

If the response is unclear or ambiguous, say,

**What do you mean? or Tell me more.**

**Items and Scoring****16. COAT-SWEATER**

2 points: Clothing...You wear them to cover you.

1 point: Keep you warm...Made of cloth...They both have arms (sleeves, buttons)...They're both warm.

0 points: Coat is heavier (warmer)...Made of wool.

**17. SPOON-FORK**

2 points: Any response stating that they are both eating utensils.  
Both are silverware...Both for eating.

1 point: Both plastic (metal)...You can dig with them.

0 points: You eat cereal with a spoon and potatoes with a fork (Q)...Like if you eat (Q).

**18. MAGAZINE-NEWSPAPER**

2 points: Both are things you read...Learn things in both...Tell the news.

1 point: Both made out of paper...You can see what's going on...Got pages...Can look at it...Buy them...Come in the mail.

0 points: Black and white and read all over...Look.

**19. PEAS-CARROTS**

2 points: Vegetables.

1 point: Eat them both...Taste good...Put them in soup...They're food.

0 points: Good for you (Q)...Taste the same...Green and orange...Dogs eat, rabbits eat them...Pick carrots and peas...Both give you strong muscles.

**20. PENNY-NICKEL**

2 points: Both are money (change, coins)...You can buy things with them...Spend them.

1 point: Both round...Have pictures...Put them in a piggy bank.

0 points: It takes five pennies to make a nickel (Q)...One is brown and one is silver...Both are shiny...Put in your pocket.

**21. RAIN-SNOW**

2 points: Both weather...Both are made out of water...Both fall from the sky...Both are wet.

1 point: You have to wear boots...Wear raincoats.

0 points: I have fun...Both are cold...Both give you a chill.

**22. CAT-MOUSE**

2 points: A response stating they are animals, mammals, or creatures.

1 point: Have four legs...Both have eyes (fur, tails, ears)...They both eat...Both run.

0 points: They chase each other (Q)...Have the same color.

**23. HAPPY-SAD**

2 points: Any response indicating they are emotions or feelings.

1 point: Both for hugging (Q).

0 points: Laugh and cry...Both part of life.



Appendix B  
Slosson Intelligence Test



1985 EDITION **SIT**

**SLOSSON INTELLIGENCE TEST**

Richard L. Stosson, M.A.

**INDIVIDUAL TEST FORM**

Name \_\_\_\_\_ LAST \_\_\_\_\_ FIRST \_\_\_\_\_ MIDDLE \_\_\_\_\_  
 Address \_\_\_\_\_  
 School/Agency \_\_\_\_\_  
 Sex \_\_\_\_\_ Grade \_\_\_\_\_ Parent \_\_\_\_\_  
 Referred By \_\_\_\_\_ NAME \_\_\_\_\_ POSITION \_\_\_\_\_  
 Examiner \_\_\_\_\_ NAME \_\_\_\_\_ POSITION \_\_\_\_\_  
 Comments: \_\_\_\_\_

**Test Results:**  
 Chronological Age (CA) ..... \_\_\_\_\_  
 Mental Age (MA) ..... \_\_\_\_\_  
 Intelligence Quotient (IQ) ..... \_\_\_\_\_  
 Percentile Rank (PR) ..... \_\_\_\_\_  
 Normal Curve Equivalent (NCE) .... \_\_\_\_\_  
 Stanine Category ..... \_\_\_\_\_  
 T-score ..... \_\_\_\_\_

**Finding the MA** Basal Age \_\_\_\_\_ (JUST BEFORE FIRST ERROR)  
 Added months \_\_\_\_\_ (QUESTIONS PASSED AFTER BASAL AGE)  
 MA \_\_\_\_\_

Date of Test: \_\_\_\_\_ YEAR MONTH DAY  
 Date of Birth: \_\_\_\_\_ YEAR MONTH DAY  
 Chronological Age: \* \_\_\_\_\_ YEAR MONTH DAY\*\*

\*When using Norms Tables, the minimum CA is 2 years and never exceeds 18 years.  
 \*\*If the number of days exceeds 15, consider as a full month and increase the months by one.

CONVERTING	1-12	4-48	7-84	10-120	13-156	16-192	19-228	22-264	25-300
YEARS	2-24	5-60	8-96	11-132	14-168	17-204	20-240	23-276	26-312
TO MONTHS:	3-36	6-72	9-108	12-144	15-180	18-216	21-252	24-288	27-324

1/2 MONTH'S CREDIT		1 MONTH'S CREDIT		2 MONTH'S CREDIT			3 MONTH'S CREDIT	
Years and months		Years and months		Years and months			Years and months	
0-0.5	1-0.0	2-0	4-0	5-0	9-0	13-0	16-0	22-0
0-1.0	1-0.5	2-1	4-1	5-2	9-2	13-2	16-3	22-3
0-1.5	1-1.0	2-2	4-2	5-4	9-4	13-4	16-6	22-6
0-2.0	1-1.5	2-3	4-3	5-6	9-6	13-6	16-9	22-9
0-2.5	1-2.0	2-4	4-4	5-8	9-8	13-8	17-0	23-0
0-3.0	1-2.5	2-5	4-5	5-10	9-10	13-10	17-3	23-3
0-3.5	1-3.0	2-6	4-6	6-0	10-0	14-0	17-6	23-6
0-4.0	1-3.5	2-7	4-7	6-2	10-2	14-2	17-9	23-9
0-4.5	1-4.0	2-8	4-8	6-4	10-4	14-4	18-0	24-0
0-5.0	1-4.5	2-9	4-9	6-6	10-6	14-6	18-3	24-3
0-5.5	1-5.0	2-10	4-10	6-8	10-8	14-8	18-6	24-6
0-6.0	1-5.5	2-11	4-11	6-10	10-10	14-10	18-9	24-9
0-6.5	1-6.0	3-0		7-0	11-0	15-0	19-0	25-0
0-7.0	1-6.5	3-1		7-2	11-2	15-2	19-3	25-3
0-7.5	1-7.0	3-2		7-4	11-4	15-4	19-6	25-6
0-8.0	1-7.5	3-3		7-6	11-6	15-6	19-9	25-9
0-8.5	1-8.0	3-4		7-8	11-8	15-8	20-0	26-0
0-9.0	1-8.5	3-5		7-10	11-10	15-10	20-3	26-3
0-9.5	1-9.0	3-6		8-0	12-0		20-6	26-6
0-10.0	1-9.5	3-7		8-2	12-2		20-9	26-9
0-10.5	1-10.0	3-8		8-4	12-4		21-0	27-0
0-11.0	1-10.5	3-9		8-6	12-6		21-3	
0-11.5	1-11.0	3-10		8-8	12-8		21-6	
	1-11.5	3-11		8-10	12-10		21-9	

1/2 X \_\_\_\_\_ = \_\_\_\_\_    1 X \_\_\_\_\_ = \_\_\_\_\_    2 X \_\_\_\_\_ = \_\_\_\_\_    3 X \_\_\_\_\_ = \_\_\_\_\_

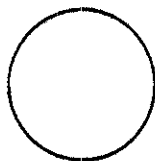
3-9, 4-0, 4-9, 5-0 (Drawing Apples)

(Encircle the numbers of all arithmetic problems as you come to them so that the person being tested can look at them while formulating an answer.)

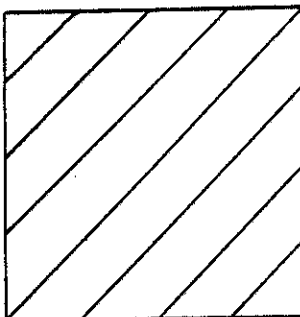
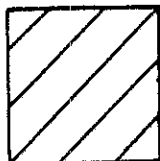
3-1 "Draw a cookie for me like this."

Trial 1.

Trial 2.



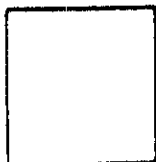
3-6 "Which of these squares is smaller?"



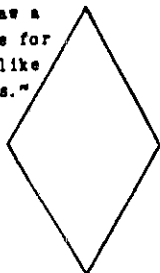
5-2 "Draw a block for me like this."

Trial 1.

Trial 2.

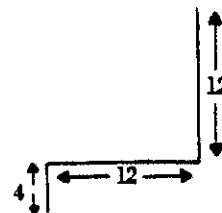


7-4 "Draw a kite for me like this."



Trial 1.

Trial 2.



- 9-6 28
- 10-8 45¢ 5¢
- 11-10. 36
- 12-2 5¢ 65¢
- 12-8 50¢ 5½
- 13-0 13
- 14-0 80¢ 20¢
- 14-6 12 20 6:00
- 14-10 50¢ 1½ 6
- 15-6 9 12
- 16-0 \$10.00 \$1.50 60¢
- 16-9 300 5 1
- 19-0 3/5 2/3 5/8
- 19-9 1 40
- 20-3 \$40,000 5 3
- 20-9 5 40 8
- 21-9 10 2 3
- 22-3 216
- 22-9 1000 10% 5%
- 23-3 \$1000 8 12
- 24-0 2, 4, 12, 48, —
- 24-3

Appendix C  
Background Information Questionnaire

PERMISSION FORM  
FOR TESTING IN A SCHOOL BUILDING  
OR DAY-CARE CENTER

I, the undersigned, (check one)  do  do not give consent to The Psychological Corporation to include my child, \_\_\_\_\_, as a  
 \_\_\_\_\_ (Please print child's name)  
 participant in the standardization of the Wechsler Preschool and Primary Scale of Intelligence - Revised (WPPSI-R) and the Ability Screener. I have read the Parent Letter describing the study. I understand that my child will be tested by a qualified examiner in the child's school or day-care building, and that my child's teacher may be asked to complete some brief rating scales about him/her. I also understand that my child's individual results will be kept strictly confidential.

I am this child's parent or legal guardian and I am completing this form on the child's behalf.

Parent's or Legal Guardian's Name (please print) _____		Date _____	
Signature _____		Relationship to Child _____	
Street Address _____	City _____	State _____	Zip _____
Area Code _____	Telephone (during day) _____		

=====

If you give consent for your child to participate, please complete the following confidential background information and return it to your child's program as soon as possible.

Child's Age: \_\_\_\_\_

Child's birthdate: \_\_\_\_\_ Child's sex: \_\_\_\_\_  
 (Month) (Day) (Year)

Parents' education (please check one in each column):

<u>Years of Education Completed</u>	<u>Mother or Female Guardian</u>	<u>Father or Male Guardian</u>
Up to 8th grade	_____	_____
9th - 11th grade	_____	_____
High school diploma or equivalent	_____	_____
1-3 years of college or technical school	_____	_____
Four years of college or more	_____	_____
Does the child live with this person? (Check if YES)	_____	_____

Mother's or female guardian's occupation (please be specific):

\_\_\_\_\_  
 Father's or male guardian's occupation (please be specific):

\_\_\_\_\_

Check the one category that best describes each parent's occupation:

	<u>Mother or Female Guardian</u>	<u>Father or Male Guardian</u>
Managerial, professional	___	___
Technical, sales, administrative support	___	___
Service	___	___
Farming, forestry, fishing	___	___
Precision production, craft, repair	___	___
Operator, fabricator, laborer	___	___
Homemaker	___	___
Not currently in labor force	___	___

Your child's race and ethnicity  
(please check one):

- \_\_\_ Asian
- \_\_\_ Black
- \_\_\_ Hispanic-White
- \_\_\_ Hispanic-Black
- \_\_\_ Native American (American Indian)
- \_\_\_ White
- \_\_\_ Other (please specify: \_\_\_\_\_)

Is your child bilingual? Yes \_\_\_ No \_\_\_

If yes, what other language does your child speak besides English?

What language is spoken most of the time in your home? \_\_\_\_\_

Child's School: \_\_\_\_\_

If your child is enrolled in preschool or day-care, what are the days and times he/she attends?

Child's Teacher's name: \_\_\_\_\_

(please check all that apply)

	Morning	Afternoon	All Day
Monday	___	___	___
Tuesday	___	___	___
Wednesday	___	___	___
Thursday	___	___	___
Friday	___	___	___
Weekend	___	___	___

=====

We also wish to test children aged 2 1/2 to 5 who are not enrolled in a preschool or day-care center. If you have a child of this age who could participate in the study, please complete the following information.

\_\_\_\_\_ Child's name                      Sex                      Date of Birth

We will offer you \$15 to cover transportation or other costs if a child who is not enrolled in a formal educational program is tested. Please provide a telephone number where we can reach you during the day to schedule testing.

(\_\_\_\_\_) \_\_\_\_\_  
Area Code                      Telephone (during day)

3812h

TFC 0483.000  
2 3 4 5 6 7 8 9 10 11 12 A B C D E

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