PHYSICAL, MENTAL, EMOTIONAL, AND EDUCATIONAL DEVELOPMENT OF TEN YEAR OLD CHILDREN

A THESIS

SUBMITTED TO THE DEPARTMENT OF

PSYCHOLOGY AND THE GRADUATE COUNCIL OF THE KANSAS STATE TEACHERS COLLEGE OF EMPORIA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE

By

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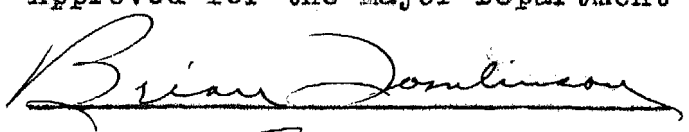
Approved for the Major Department



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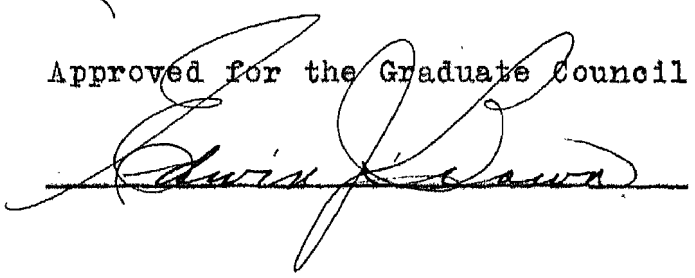

ACKNOWLEDGMENT

Acknowledgment is due to Dr. Brian Tomlinson for the interest and encouragement he has given to this study.

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CHAPTER I

NATURE OF THE STUDY

To establish a level of ability for ten year old children is the aim of this problem. Norms as forms of comparison had been prepared to show what the ten year old child should do in the various types of tests, but this problem shows what fifty ten year old children did on these tests.

The number of children used varied because of the length of the period over which the tests were administered. The children used were those children who were between nine and one-half years old and ten and one-half years old during the six month period of testing. Each child in Pratt, whose birthday came between September 1, 1924, and March 1, 1925, was used in the study. There were forty-nine children used. Some of them were absent while some individual tests were being given; that explains the smaller number of children used in some of the tests. The number of children used in the study is not large; however the group of children used is not a selected group, but is typical of the ten year old group found in most public schools.

The first tests were given in September, 1934, and the last ones in April, 1935. Some of the tests were given as group tests. These include the Public School Achievement Test, the Henmon Nelson Test, and the Kent-Rosanoff

Test. Those given individually were the performance tests. Giving individual tests involves a certain amount of time, some of the tests taking only four or five minutes and others as much as fifteen minutes.

THE SCOPE OF THE STUDY

The kinds of tests used in the problem may be classified into four groups. The first is the achievement test. The one used was the Public School Achievement Test. The second group includes two types of intelligence tests, the Henmon Nelson Test, a test of verbal response, and a battery of six performance tests. The performance tests used were Mare and Foal, Sequin Formboard, Healy I Picture Completion, Knox Cube Test, Witmer Cylinder Test, and the Porteus Maze Test. The third group includes physical information of the children used. The fourth group may be classified as personality information. The tests used were the Kent-Rosanoff Free Association Test, and the Neymomn-Kohlstedt Diagnostic Test for Introversion-Extroversion. The sixth chapter contains a summary of the results of the tests used.

CHAPTER II

ABILITY IN SCHOOL SUBJECTS

The Public School Achievement Test was used as a measure of ability in arithmetic, reading, language, and spelling. The test is published by the Public School Publishing Company, Bloomington, Illinois. The tests are designed for use in grades three to eight and are contained in one booklet. On the front of each booklet is a graph containing the median score for each half year beginning with 2B and ending with 9A. The median score is given for each individual subject and also for the total test. The test in each subject is scaled. By this is meant that the test items range from less to more difficult ones.

> The tests are perfectly objective and yield highly reliable measures of pupil achievement. The results indicate that in addition to being highly reliable, the tests discriminate sharply between different levels of achievement. To insure high curricular validity, it is necessary to provide an extensive sampling of the materials taught in the grades for which the test is designed. In order to procure such a body of valid curricular material, a careful analysis was made of leading textbooks, modern courses of study, and scientific investigations dealing with the validity and difficulty of curricular material. The Public School Achievement Tests have been constructed from this body of subject matter, sampling the material very extensively.[1]

A useful index for designating the reliability of a test is the reliability coefficient. The following table

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[1] Jacob S. Orleans, Handbook for Teachers, Public School Achievement Tests, (Bloomington, Illinois: Public School Publishing Co., p. 2.

contains the reliability coefficients for Form 3 of the Public School Achievement Tests, obtained by using a single grade.

TABLE I

RELIABILITY COEFFICIENTS OF SCHOOL SUBJECTS IN PUBLIC SCHOOL ACHIEVEMENT TESTS

Reading	Arith. C.	Arith. R.	Lang. Usage	Spelling
.870	.945	.9	.812	.956

Read table thus: The reliability coefficient of reading is .870, etc.

The reliability coefficients on these tests are high as will be realized when eight tenths is considered a high reliability coefficient.

The reading test provides a measure of two of the most important abilities in reading: the ability to select the central thought in a paragraph, and the ability to answer questions of detailed fact. The test consists of a series of fourteen paragraphs graded in difficulty and sixty-two multiple choice questions necessitating careful reading and interpretation of each paragraph. The following is an example taken from the test booklet, page two:

Read this story:

I have a little black cat. Her name is Pet. She likes to sleep by the fire.

8. Draw a ring around the word that tells what kind of pet I have. dog - cat - bird - rabbit

There are two arithmetic tests, a computation test of seventy-three examples and a reasoning test of forty-eight examples. These comprehensive tests which are based upon textbook material and courses of study sample extensively the important types of problems and arithmetical processes common to the elementary school curriculum in arithmetic.

The following are examples in arithmetic: From the seventy-three problems of computation the range of difficulty is from such problems as 3 plus 6=? to such problems as 15 : 5=? : 8. These are examples from the forty-eight reasoning problems:

1. How many pencils are 2 pencils and 8 pencils?

48. Three boys formed a partnership. The first boy put in 40 marbles, the second 56, and the third 32. What was each one's share of the 64 marbles they won?

The Language Usage Test contains eighty sentences setting forth the most important and frequent errors in diction and grammatical usage taken from scientific investigation of language errors. This comprehensive test of language errors and usage provides a valuable diagnostic measure of language errors. The questions are of the alternate-response type and the completion type. The language usage consists of three parts. The following are examples taken from each part:

Part I

Directions: Look at this sentence,

He (isn't--ain't) a good boy.

The word isn't is right and the word ain't is wrong. Draw a ring around the word isn't because it is the right word. When you are given the signal to begin, work the other exercises in Part I in the same way.

Part II

Directions: In the following sentences, write one word on each dotted line to make the sentence correct and sensible.

1. I am ten years old. John is eleven years old. John is older than_____.

Part III

Directions: Under each of the following sentences there are several words or expressions, but only one word or expression will make the sentence correct. Draw a ring around the word or expression under each sentence that would make the sentence correct.

1. It is_____time to go.

most--almost--very near--just--near

The words in the spelling or dictation test were taken from the Iowa Spelling Scales and checked for curricular validity in the revised Horn-Ashbaugh Speller. The spelling words are incorporated into sentences and the test is administered as a dictation test. The entire test consists of twenty-seven sentences and one hundred fourteen words.

Work time on these tests follows:

Reading . . . . . 30 minutes

Arith. Computation . . . . . 40 minutes

Arith. Reasoning. . . . . .40 minutes

Lang. Usage . . . . . .15 minutes

Spelling. . . . . .20 minutes

The ten year old children in this study were quite evenly divided between the fourth and fifth grades; twenty-five were in the fourth grade, and twenty-four were in the fifth. The average ability of a ten year old child varied between 5.2 in reading, which is the highest, to 3.9 in language usage, which is the lowest. The reason for the ten year old's ability in the arithmetic test being lower than on the reading test may be partly answered by the material found in the arithmetic test. In the fourth grade textbook, no study is made of fractions or decimals but they are studied quite extensively in the fifth grade. A fifth grade ten year old did much better on the test than a fourth grade ten year old did. The average of the two determined a rather low ability level for the ten year old in arithmetic.

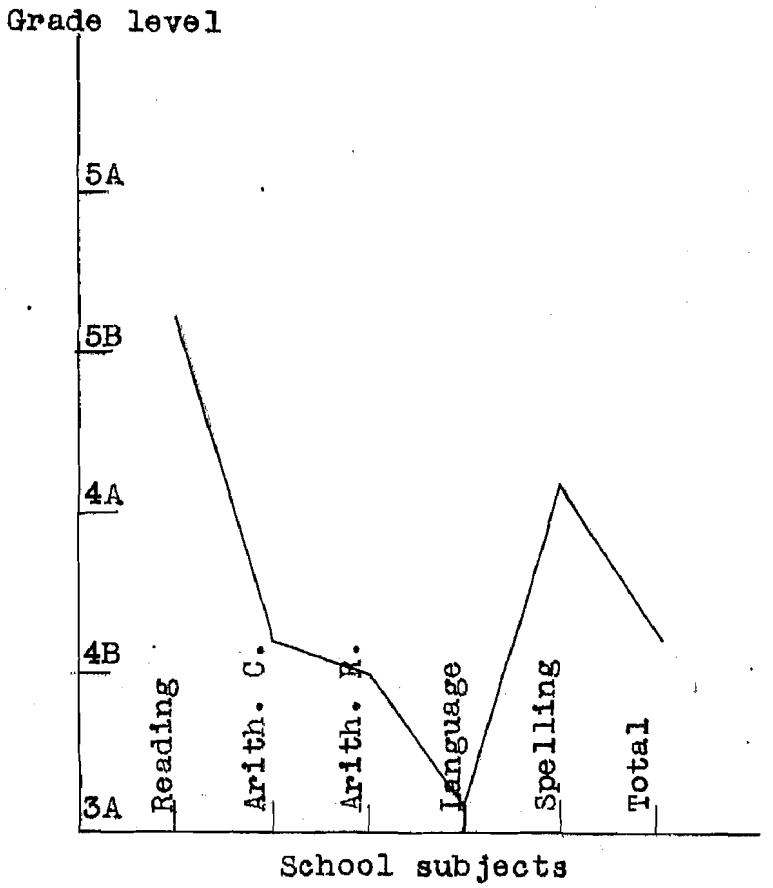

FIGURE I

AVERAGE SCORES ON THE PUBLIC SCHOOL ACHIEVEMENT TEST

Read figure thus: The average score in reading shows a ranking above 5B, etc.

TABLE II

RESULTS OF THE PUBLIC SCHOOL ACHIEVEMENT TEST

BOYS

Boy	Reading	Arith. C.	Arith. R.	Lang.	Spelling	Total
1.	---	---	---	---	---	---
2.	6	5	6	4	11	32
3.	27	27	13	30	45	142
4.	50	26	17	43	58	194
5.	29	22	10	19	56	136
6.	31	27	13	32	47	150
7.	26	30	20	33	58	167
8.	16	20	5	21	33	95
9.	35	32	14	30	50	161
10.	56	33	23	42	95	249
11.	48	33	17	39	64	201
12.	37	19	10	34	57	157
13.	7	5	5	-26	7	-2
14.	37	22	16	33	51	159
15.	35	14	15	14	36	114
16.	32	24	16	26	57	155
17.	35	13	3	23	48	122
18.	41	21	13	42	96	213
19.	31	25	12	21	45	134
20.	35	20	12	23	47	137
21.	32	27	15	20	45	139
22.	43	17	10	40	55	165
23.	49	14	11	33	52	159
24.	32	9	5	22	40	108
25.	11	10	7	12	21	61
26.	17	21	5	-10	42	75

Read table thus: Pupil Number 2 scored 6 on reading, 5 on arithmetic computation, etc. Read across the page.

TABLE II (continued)

RESULTS OF THE PUBLIC SCHOOL ACHIEVEMENT TEST

GIRLS

Girl	Reading	Arith. C.	Arith. R.	Lang.	Spelling	Total
1.	38	24	13	32	64	171
2.	45	21	16	25	55	162
3.	35	17	9	35	58	154
4.	31	32	16	35	56	170
5.	34	22	12	29	45	142
6.	54	27	10	36	12	139
7.	41	30	17	24	56	168
8.	28	19	13	22	52	134
9.	50	28	18	39	64	179
10.	24	23	12	30	44	133
11.	--	--	--	--	--	171
12.	29	21	11	32	44	137
13.	19	32	11	3	38	103
14.	18	13	3	11	38	83
15.	17	8	2	2	16	45
16.	32	26	9	39	61	166
17.	40	22	10	38	49	159
18.	22	12	8	16	45	103
19.	38	31	16	46	50	181
20.	20	12	5	14	28	79
21.	16	19	11	10	27	83
22.	13	8	6	1	15	43
23.	44	12	8	39	48	151
Avg. Boys and Girls	31.61	20.72	11.25	24.64	46.4	134.9

Read table thus: Pupil Number 1 scored 38 on reading, 24 on arithmetic computation, etc. Read across the page.

CHAPTER III

CAPACITIES AS DETERMINED BY INTELLIGENCE TESTS

Two types of intelligence tests were used. The Henmon Nelson Test, a test of verbal response, was the group test given. A battery of six performance tests was also given. The performance tests are individual tests.

The Henmon Nelson Test is designed to measure the mental capacity of elementary school pupils. Two forms of the test, which are identical in difficulty and construction, are available. Form A was used in this study. Each form consists of ninety items scaled in order of increasing difficulty. A wide variety of types of questions is used, thus furnishing a test of many types of ability. Some of the types are new and afford a measure of capacities which probably are not measured in other tests on this level.

The administration of the tests is very simple and any one who will follow the brief directions carefully can administer them with ease and with the assurance of securing results comparable with those obtained by highly trained examiners. The time limit is thirty minutes. Scoring is done in a remarkably short time, since the Clapp-Young self marking device is employed.

> There is no direct method of determining the validity of tests of mental ability. The tests have been constructed, however, with such care as to insure all possible validity. Originally 297 items were constructed and

submitted to experienced teachers for their criticisms. From this number 250 items were then selected and administered in two forms. Only such items as proved to differentiate between pupils of known superiority and known inferior mental ability were selected and retained. A second experimental edition was then mimeographed, each form consisting of 101 items. On the basis of this administration, time limits were determined and 90 items were selected from among those which had the best predictive value.

Another method of determining validity is by comparison with other tests which have proved to be useful as measures of mental ability. Only two such studies have been made, both of them involving grade 8A. The correlation obtained between mental ages on the Kuhlmann-Anderson Test and Henmon-Nelson test was r = .77 .04. The correlation between I. Q. ratings was r = .83 .03. This study was made by Thomas J. Berto of the Henry L. Palmer School, Milwaukee, Wisconson, with forty-three pupils in grade 8A. At the Eugene Field School in the same city the Terman Group Test of Mental Ability had been given to eighty pupils in grade 8A who took the Henmon-Nelson Test. The correlation between the scores on the two tests was r = .72 .04.

The reliability coefficients for each age group is based upon exactly 100 cases chosen strictly at random. The method used was to correlate the scores on the even-numbered items with the scores on the odd-numbered items. The resultant coefficient was substituted in the Spearman-Brown formula. For age 10 the coefficient of reliability is .931, the Standard Deviation is 16.1, and the probable error of the raw score is 2.8.[1]

A sample of the test items follows:

Boys like to play: 1. ball 2. state 3. dust

4. never 5. blue 1 2 3 4 5

You are to mark in the square which has the same number as does the word that tells you what it is boys like to play. This word is "ball."

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[1] Teacher's Manual, Henmon-Nelson Tests of Mental Ability

In the following paragraphs will be found a discussion of the six performance tests used. This information includes the description of the tests and directions for giving and scoring the tests. These tests were not given consecutively to each child, but were administered by the examiner from time to time during the six month period. Several tests were used at the same time; each child taking these tests before another group was begun.

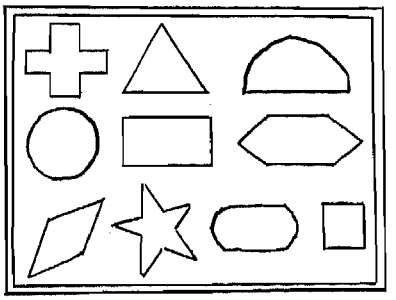

FIGURE 2

This is a drawing of the Sequin Form Board. Sylvester gives this description of the board:[2]

> The ten geometrical figures, as nearly uniform in size as their variety of form will allow, are cut through an oak board twenty by fourteen by three-eighths inches. This oak board is glued to a soft wood board of the same length and breadth, five-eighths inch thick. The result is a thick board of moderate weight with a hard oak surface in which the ten forms appear as shallow holes or

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[2] Rudolf Pintner and Donald G. Patterson, A Scale of Performance Tests (New York: D. Appleton and Co., 1925), p.30.

recesses. About the edge is placed an oak strip one and one-fourth by one and one-fourth inches, fitting flush with the soft wood back and forming a one-fourth inch raised edge about the oak surface. Corresponding to the ten recesses are ten walnut blocks, seven-eighths inch in thickness, each of which fits loosely into its corresponding recess. The thickness being more than twice the depth of the recesses, the blocks can be easily grasped and removed. The board and the blocks are finished in their natural oak and walnut colors and the recesses are painted black. The whole is carefully finished in order to give it an attractive appearance--an important feature in a mental testing device. This description applies to what may be called the standard form board--the type now in most general use.

This description differs slightly from that of the Goddard Form Board, which is manufactured by Stoelting.

The directions for giving and scoring are:[3]

The form board lies horizontally on a table, its lower edge even with the edge of the table next to which the child stands. The table must be low enough to allow him to lean well over the board and to look down upon its center. The blocks are placed in three piles on the table next to the upper edge of the board, no block in the pile nearest its recess, the lozenge and the elongated hexagon not in the same layer, and the star in the lower layer. This is the arrangement at the beginning of each of three trials. The child is introduced to the test with no introduction concerning it except, 'let us see how quickly you can put the blocks into place.' Then he is given a second and third trial, in which he is encouraged and urged in every way to make the best record of which he is capable.

In actual practice, the examiner took a record of the three trials, and the shortest of the three trials was used as the child's form board index.

KNOX CUBE TEST

The material required is five blocks of the same color and size. We have, in general, made use of the

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[3] Ibid., p. 30.

Binet block cubes. Since the work on this test was started, Knox has devised different material, namely four cubes of different colors mounted on a base board, and this is the material supplied by the dealers under the name of Knox Cube Test.[4]

The material used in this study was four black cubes and two red cubes. One of the red cubes was used by the child and the other by the person giving the test.

The following are the movements used:

A.	1 2 3 4	C.	1 4 3 2	G.	1 3 1 2 4
X.	1 2 3 4 3	D.	1 4 2 3	H.	1 4 3 1 2 4
Y.	1 2 3 4 2	E.	1 3 2 4 3	I.	1 3 2 4 1 3
B.	1 3 2 4	F.	1 4 3 2 4	J.	1 4 2 3 4 1

Method of giving:[5]

> The four cubes are placed on the table in front of the subject at a distance of about two inches apart. The examiner holds the fifth cube in his hand. He says to the subject, 'Watch carefully, and then do as I do.' He then taps the blocks with the fifth cube in a certain definite order and at a certain definite rate (about one tap per second), always beginning with the cube at the child's left or the examiner's right, if he is facing the child. He then lays the fifth cube down in front of the child equidistant between the third and fourth cube, but nearer to the child, and says, 'Do that.' . . .
>
> A record of the number of lines passed or failed is kept. The examiner continues as far as possible with the child, always continuing with at least three lines after the child fails. . . .

PORTEUS MAZE TEST

The Porteus Maze Test consists of thirteen tests. The first age level of the test is the three year old test; the

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[4] Ibid., pp. 67-68.

[5] Loc. cit.

highest level is the Adult II.

> The maze test practically stands alone in its application to certain important temperamental characteristics. Its value is gained, not so much by the choice of the maze as test material, but by the conditions that have been laid down for its scoring and application. The procedure is such that the greatest weight and emphasis are attached to the subject's tendency to use prudence, and to profit by his mistakes. It is this feature of the tests which warrants their use as tests of temperamental capacities.[6]

Each test is printed on a sheet of paper seven by five inches. A set of these tests will be found in the Appendix. They may be obtained from C. H. Stoelting Company, 424 North Homan Avenue, Chicago, Illinois.

Most of the necessary directions for using the test are given in the following paragraphs. More detailed directions can be found in the Porteus Maze Manual.

General directions:[7]

1. Never begin testing above the five year level, no matter what the age of the subject.
2. Continue the test until failure in the test for two successive years has resulted.
3. Do not allow the subject to correct his own error. Give a new sheet at once.
4. Do not allow the subject to trace the course in the air.
5. When to invert a test. When a child fails in a test but succeeds in the next higher test, the latter should be turned upside down and the test repeated, giving the allotted number of trials.

Specific directions:

Test for Year III. Examiner says, 'Look here are two black lines on this paper. I want you to take this pencil

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[6] S. D. Porteus, Guide to Porteus Maze Test, (Vineland, N. J., Publications of the Training School, Department of Research, No. 25, March, 1924), p. 17

[7] Ibid., p. 19

and draw around between the black lines as carefully as you can without touching them, like this, (Examiner illustrates by drawing about an inch along the path starting from S and in the direction of the arrow.) Be sure to keep the pencil right between the lines.' Two trials are allowed.

Test for Year IV. Examiner says, 'Do this just the same way. Start here. (Indicates start). Draw right around between the lines. Be sure and don't cross any.' Two trials are allowed.

Test for Year V. 'These are all roads and the lines are fences. Some of the roads are open and some are closed. This road is open and if you were driving an automobile you could get out here. (Point to the opening at end of the fourth road and indicate without touching the paper the motion of passing out through the open space.) This road is open and you could get out here. (Point to opening at the end of the sixth road and again indicate motion of passing out through the open space.) But there is a fence here. (Point to the seventh road and show line across the end.) You couldn't get out here. And there is a fence here, here, here, and here, so you could not get out. (As the above directions are given, point to the line blocking the exit in the fifth, third, second, and first roads in order, showing that the child cannot get out the blocked place.) Now take the pencil and start here. (Indicate S.) Go down the road and go out the first open road you come to.' Two trials are allowed.

Test for Year VI. Examiner says, 'Start here (indicating start) and find your way out here. (Point out arrow at the other end.) You may go along any road you like but you must not go into any blocked roads nor cross any of the lines. Start here (indicating start) and find your way out here. (Point to final arrow). You may stop and look as long as you like but you must keep your pencil on the paper.' Allow two trials.

Test for Year VII. Examiner says, 'Start here (pointing to start) and find your way out just the same way without going into any blocked places and without crossing any lines.' Allow two trials.

Tests for Years VIII, IX, X, XI. Examiner says, 'Start here and find your way out the open place.' (Indicate S for the start but do not show the exit.) Allow two trials for each test.

Tests for years XII, XIV. Procedure as before. Allow four trials for each test.

Adult I, II. Procedure as above. Allow two trials for each test.

Scoring

1. Assuming child received full credit for three and four year tests, allow a basal age of four. Add one year for each test passed on first trial and one-half year for each test passed on second trial. (Up to and including eleven year test.)

2. If both the XII and XIV year tests are passed, add together the number of trials and give additional credit as follows:

Sum of trials in XII and XIV years	Credit
2	5 years
3	4 years
4	3 years
5	2½ years
6	2 years
7	1½ years
8	1 year

3. If XIV year test is failed, credit one year providing the XII year test is passed on the first, second, or third trial. Credit one-half year if the XII year test is passed on the fourth trial.

4. If the XII year test is failed and the XIV year test is passed, credit is given as follows:

Number of trials in XIV year	Credit
1	2 years
2	1½ years
3	1 year
4	½ year

In this case the XIV year test should always be inverted.

5. If adult tests are used, additional credit is obtainable as follows:

Number of trials in adult tests	Credit
2	2 years
3	1½ years
4	1 year

The total score obtainable in the series if the adult mazes are used is 18 years.

HEALY PICTURE COMPLETION

Description:[8] A board ten by fifteen inches and fifty inch square pieces are used for this test. The board has a cloth covering over the back with recesses on the front into which the child may place the appropriate squares. On the front of the board is a picture. The squares placed in the correct places help to complete the meaning of the picture. A photograph of this test can be found in Pintner and Patterson.

Directions:[9] Place board in front of child with blocks in random order. Say, 'Look at this picture and see what is happening. Look what the people are doing. You are to fill in these empty spaces so as to make the picture look right; so as to make the best sense. Any of these blocks up here will fit into any of these spaces.'

MARE AND FOAL

Description:[10] It is a board measuring twenty-nine by twenty-four and one-half centimeters and one centimeter upon which a colored picture is pasted. The picture represents a mare and foal in a field with two sheep lying down and three chickens in the foreground. In the background two houses are seen in the distance. Eleven pieces have been cut out of the picture and the pieces are of different shapes. They represent certain parts of the animals or of the scene. The modification of the original board as made by us is the omission of the four geometrical pieces at the top of the picture. After some preliminary experimentation these four pieces were glued into place and not used for testing purposes. Two of these pieces are triangles and two are somewhat in the shape of a diamond.

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[8] Rudolf Pintner and Donald Paterson, op. cit., p. 62.

[9] Loc. cit.

[10] Rudolf Pintner and Donald Paterson, op. cit., pp. 26-27

Except in the case of very young children, the only value of this test lies in its use as an introduction to further testing. Its bright pictures and puzzle-like nature evoke interest and help to create a friendly attitude.[11]

Directions:[12] Put these pieces in the right places as quickly as you can, without making any mistakes.

Time and error counted. Time limit is five minutes. D. N. C. (did not complete) is recorded if the child fails to finish the test within the five minute limit.

WITMER CYLINDER TEST

Description:[13] Circular board having a series of recesses about its outer edge into which are fitted eighteen cylinders differing in depth and diameter. There is a central compartment into which the blocks may be thrown and mixed.

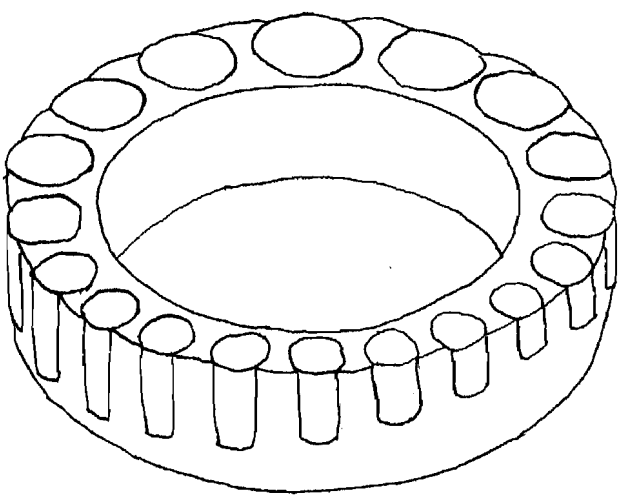

FIGURE 3

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[11] Augusta F. Bronner, William Healy, Gladys M. Lowe, Myra E. Shimberg. A Manual of Individual Mental Tests and Testing (Boston: Little, Brown, and Company, 1928), p. 222

[12] Rudolf Pintner and Donald Paterson, op. cit., p. 29

[13] Bronner, Healy, Lowe, Shimberg, op. cit., p. 115

Directions:[14] Place board before child with small cylinders next to him, all cylinders in place. Give three trials and four stops to each trial if necessary. Say, 'I am going to take these blocks out and place them in the center and I want you to put them in as quickly as you can.' Take cylinders from both sides and toss them into the center. Then say, 'You may use both hands. Do it as quickly as you can.'

Second trial: 'Now I am going to take them out and see if you can put them in more quickly this time.'

Third trial: 'Now once more.'

Time each step. Time limit of each trial is five minutes. Final score is shortest trial.

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[14] Loc. cit.

TABLE III

I. Q. AND MENTAL AGE OF PUPILS ON HENMON-NELSON TEST AND SIX PERFORMANCE TESTS

Pupil	I. Q.	M. A.	Sequin	Knox Cube	Porteus Maze	Healy I	Mare & Foal*	Witmer Cylinder
1.	--	--	8	8	7	14	16-9.5	7
2.	76	7-10	10	14	10.5	11	16-7	13
3.	101	10-4	12	10	10.5	8	16-13.5	10
4.	104	10-8	8	7	11	10	11-6	7.5
5.	110	11-3	9	12	9	14	15-9.5	7.5
6.	98	10-3	--	14	13.5	8	-- --	10
7.	107	11	9	15	12.5	8	15-13.5	12.5
8.	70	7	8	14	7.5	12	11-16	--
9.	104	10-8	7	12	9	14	10-9.5	11.5
10.	145	14-10	12	18	13.5	14	16-13.5	10
11.	102	10-6	8	15	8	6	16-13.5	8.5
12.	103	10-7	8	18	14.5	10	16-13.5	10
13.	--	--	6	14	7	8	8-5	11
14.	98	10	7	12	10	11	10-9.5	8.5
15.	89	8-11	10	14	9.5	10	11-9.5	8.5
16.	98	10	14	14	12	10	15-9.5	10
17.	--	--	7	14	10	14	16-16	9
18.	102	10-3	8	14	9.5	14	11-9.5	8.5
19.	111	11-1	8	10	14	11	15-9.5	10
20.	101	10-1	6	14	11.5	14	12-9.5	10.5
21.	102	10-3	8	14	15.5	7	13-14	10
22.	103	9-9	9	14	10	9	13-9.5	12
23.	107	10-8	9	12	12.5	14	16-16	12.5
24.	97	9-9	9	15	13.5	14	16-9.5	9
25.	72	7-6	9	12	15	14	9-6	10
26.	95	8-10	7	10	11	8	16-13.5	10
27.	104	10-8	8	10	10.5	14	16-13.5	10
28.	108	11-1	9	12	10	11	16-13.5	10
29.	110	11-3	9	15	10.5	14	16-16	15
30.	98	10-1	8	0	15	14	15-7	10.5

31.	111	11-8	8	14	13.5	13	16-9.5	10
32.	112	11-6	7	0	11.5	14	13-16	9
33.	114	11-8	7	14	10.5	10	16-13.5	10
34.	101	9-10	7	15	12.5	12	16-13.5	11.5
35.	120	12	8	14	16	10	16-13.5	9.5
36.	104	10-5	6	12	9.5	10	8-9.5	8.5
37.	103	10-4	7	12	7.5	11	16-13.5	8.5
38.	109	10-11	7	14	8	10	10-5	10
39.	97	9-9	9	7	7.5	14	16-16	15
40.	--	--	6	0	5.5	14	13.13.5	9.5
41.	78	7-9	7	10	8	8	12-7	10
42.	115	11-6	9	14	9.5	11	16-16	13
43.	120	12	8	10	10.5	14	16	16
44.	95	9-9	--	10	--	14	--	10
45.	114	11-8	9	18	8.5	14	16-16	12.5
46.	101	10-1	6	14	10.5	12	16-9.5	15
47.	87	8-9	8	8	8	14	16-9.5	10
48.	78	8	7	8	--	8	13-7	9
49.	--	--	8	9	11	10	14	9
Average			8	12	10.7	12	16	10
Median	102	10.4						

Read table thus: Pupil 2 has an I. Q. of 76, a mental age of 7 years and 10 months as found on the Henmon-Nelson Test, a mental age of 8 on the Sequin Test, etc.

*The first mental age in this column is the pupil's mental age based on time; the second mental age is based on the number of errors made.

CHAPTER IV

PHYSICAL DEVELOPMENT

Since physical development of boys and girls varies to some extent, the average of their physical development has been made in separate columns.

The information for the height, weight, chest inspiration and expiration, and nutrition columns was taken from the permanent health card used for each child. The number of children over weight in this group was quite small. There was one girl over, six normal, and sixteen under; there were two boys over, twelve normal, and eleven under. This was determined not by comparison with an average, but each child's normal weight was determined by that child's height.

In table IV and table V the physical developments of the children used in this study are given. The height, chest inspiration and expiration are given in inches; the weight, in pounds.

In tables VI and VII a comparison is made with norms already established.

TABLE IV

PHYSICAL DEVELOPMENT OF TEN YEAR OLD BOYS

Pupil	Height	Weight	Insp.	Exp.	Nut.*
1.	50.75	59	26.5	24	0
2.	54.25	62.25	28	25	-
3.	56.25	74.5	31	27	0
4.	56.75	70.5	27.25	25.5	-
5.	54.75	63.75	26	23.5	-
6.	--	--	--	--	
7.	53.75	64.25	27	24.5	-
8.	49.5	55.75	28	25.5	0
9.	56	66.25	26.75	24.5	-
10.	57	69	28.5	26	-
11.	58.25	82.5	30.5	28	0
12.	54.75	68.75	29	25.5	0
13.	52	61	28	26.5	-
14.	56.25	78.25	29.75	27	0
15.	52.25	68.5	27.5	25.5	±
16.	59.25	85.5	30	27	0
17.	55	72	28	26.25	0
18.	54.5	68.25	26.75	24.5	0
19.	53.25	58.75	27.5	25	-
20.	54.	63.25	28	25.5	0
21.	56.5	75	28	26	-
22.	53.25	65.5	27	24.5	0
23.	58.25	90.25	28.5	26	±
24.	50	55.25	26	24	-
25.	51	62	27.75	25	0
26.	51.5	65.75	28	24.5	0
Average	56.32	68.23	27.97	25.45	

Read table thus: Pupil 1 had a height of 50.75 inches, weight 59 pounds, etc.

*0 means nutrition is satisfactory, - means it is under normal, and ± that it is above.

TABLE V

PHYSICAL DEVELOPMENT OF TEN YEAR OLD GIRLS

Pupil	Height	Weight	Insp.	Exp.	Nut.
1.	53.25	63.25	25.5	23.5	-
2.	53.5	58.5	25.5	23.5	-
3.	52.25	52	24.75	23	-
4.	53.75	62.25	26	23.5	-
5.	53.75	63.75	26.5	24	0
6.	56.25	65.75	27	24	-
7.	53.75	55	25.5	24	-
8.	52.5	57.75	24.5	23	-
9.	55.5	58.25	25.5	23	-
10.	52	56.5	24	22	-
11.	52.25	58.25	25.75	24	-
12.	55.75	70.75	27	25	-
13.	54.75	72.5	25.25	23.5	0
14.	51	59.5	27	24	0
15.	52.5	60.75	26.25	24.5	-
16.	54	73.25	28	26	0
17.	51.75	55.75	25.5	23	-
18.	50	48.75	24.5	22	-
19.	51.25	54.25	24.75	22	-
20.	57.25	94	29.75	26.75	±
21.	50.75	56	24	22	-
22.	53	69	27	25	0
23.	52.5	72	28	26	0
Average	48.93	57.51	23.90	21.89	

Read table thus: Pupil 1 had a height of 53.25 inches, weight 63.25 pounds, etc.

TABLE VI

COMPARISON WITH ESTABLISHED NORMS

OF HEIGHT AND WEIGHT OF TEN YEAR OLD BOYS

	Height	Weight
Smedley's[1]	52.46 in.	64.97 lb.
Pratt	56.32 in.	68.23 lb.

Read table thus: Smedley's ten year old boys' average height is 52.46 inches; ten year old of Pratt is 56.32 inches, etc.

TABLE VII

COMPARISON WITH ESTABLISHED NORMS

OF HEIGHT AND WEIGHT OF TEN YEAR OLD GIRLS

	Height	Weight
Smedley's	52.24	63.23
Pratt	48.93	57.51

Read table thus: Smedley's ten year old girls' average height is 52.24 inches; ten year old of Pratt is 48.93 inches, etc.

[1] E. A. Doll, Smedley's norms in Anthropometric Measurement and Mental Diagnosis (Vineland, New Jersey: Vineland Training School).

CHAPTER V

PERSONALITY TRAITS AS REVEALED IN TWO TESTS

Two types of personality tests were given: the Kent-Rosanoff Free Association Test and the Heyman-Kolstedt Introversion-Extroversion Test.

The Kent-Rosanoff Test is usually given as an individual test but in this instance it was given as a group test. The test is often used to detect pathogenic subconscious ideas or complexes that may be suspected to exist. The examiner may use stimulus words adapted to the particular case. In such cases it is advisable to record in each instance the reaction time in fifths of a second, taken by means of a stop watch. Subconscious ideas or complexes are said to be indicated either by abnormal types of reaction or by instances of reaction time much above the average for the individual.

This test has been applied to one thousand normal subjects, and all the reactions arranged in frequency tables for the one hundred stimulus words.

It has been shown that children furnish reactions which are classified as individual responses by the adult table but should be classified as juvenile reactions.

The results found in the table in this chapter were obtained from a group test. Each child took a sheet of paper and numbered to one hundred. The examiner read the list of

one hundred words slowly enough for most of the group to write their first response to the stimulus word. The high average found in the individual response column and the question column can be partly accounted for. Some of the slower children could not write rapidly enough; some could not think of another word, and others were unable to spell the word they wished to write. A list of the one hundred stimulus words can be found in the appendix.

Figure 4 shows the average of the group score compared with a norm already established for common school children.

The Neymann-Kohlstedt Diagnostic Test for Introversion-Extroversion is rather a new and perhaps less well known test than some others in the same field. It has not been widely used as a test for children but the results are intensively interesting to the examiner when taken in comparison with the examiner's opinion of the child.

The scores for this group ranged from a minus twelve, an introvert score, to a plus twenty-two, an extrovert score. The highest possible introvert score is minus fifty and the highest possible extrovert score is plus fifty. There were thirteen introvert scores, thirty-one extrovert scores, and two with scores of zero, which is a normal score. From this one can see the tendency for ten year old children seems to be toward extroversion rather than introversion.

Following are the directions for the test and an example taken from the test.

Directions:[1] This test is composed of fifty statements, each being followed by the words Yes and No. There is no implication of right or wrong in any of these statements and you are asked to consider them from the viewpoint of personal like or dislike. Read the first statement and if you like the idea that it expresses, draw a line under Yes. If you dislike it, draw a line under No. Proceed in the same way with the rest of the statements.

Following are two statements from the test:

1.	By by yourself a great deal	YES	NO
2.	Think of life in terms of pleasure	YES	NO

[1] The Neymann-Kohlstedt Diagnostic Test for Introversion-Extroversion.

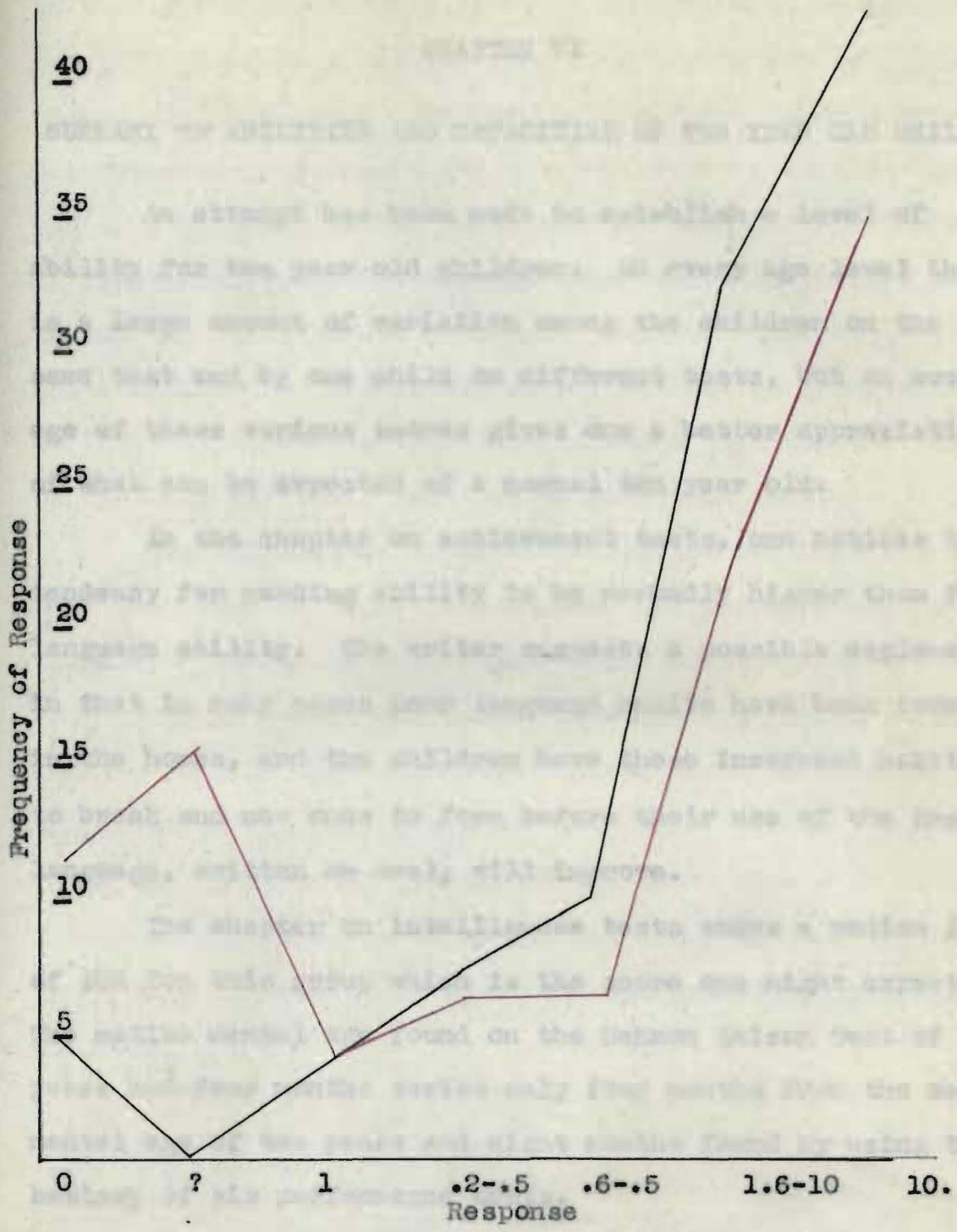

FIGURE 4

RESULTS OF KENT ROSANOFF TEST

Read figure thus: The average response of the ten year old showed eleven individual responses as compared with five individual of the norms established for the common school child. Kent-Rosanoff group is represented by the black line. Pratt group is represented by the red line.

CHAPTER VI

SUMMARY OF ABILITIES AND CAPACITIES OF TEN YEAR OLD CHILDREN

An attempt has been made to establish a level of ability for ten year old children. On every age level there is a large amount of variation among the children on the same test and by one child on different tests, but an average of these various scores gives one a better appreciation of what can be expected of a normal ten year old.

In the chapter on achievement tests, one notices the tendency for reading ability to be markedly higher than for language ability. The writer suggests a possible explanation in that in many cases poor language habits have been formed in the homes, and the children have these incorrect habits to break and new ones to form before their use of the English language, written or oral, will improve.

The chapter on intelligence tests shows a median I. Q. of 102 for this group which is the score one might expect. The median mental age found on the Henmon Nelson Test of ten years and four months varies only four months from the median mental age of ten years and eight months found by using the battery of six performance tests.

The tests of personality were particularly interesting to the examiner because of the comparison that could be made with the examiner's impression of the child. There were not

in this group any extreme cases of introversion or extroversion, the scores ranging from plus twenty-two to a minus eight. It is commonly considered that there is no marked introversion or extroversion unless the score exceeds minus ten or plus ten. If the Kent-Rosanoff test had been used as an individual test, the average score under individual responses and questionable responses would no doubt have been quite different. Each child would have had an opportunity to think of a response for each stimulus word and the problem of spelling difficult words would have been removed.

The averages of physical capacities for boys and girls have been kept in separate columns. They are far more meaningful and useful in this form. When possible, numbers have been given in pounds and inches because more people in this country have an understanding of these terms in contrast to the terms of the metric system.

A future study of another age level should prove quite interesting as a means of comparison since several of the tests used in this study have not been generally used among children.

TABLE VIII

PHYSICAL, MENTAL, EMOTIONAL, AND EDUCATIONAL DEVELOPMENT OF TEN YEAR OLD CHILDREN

	PHYSICAL INFORMATION					PERSONALITY								INTELLIGENCE		ACHIEVEMENT TESTS						PERFORMANCE TESTS					
						Kent-Ros.																					
Boy	Height	Weight	Insp.	Exp.	Nut.	0	?	.1	.2	.6	1.6	10	Intr-Extr	M. A.	I. Q.	Read.	Arith. C.	Arith. R.	Lang.	Spelling	Total	Seguin	Knox Cube	Porteus Maze	Healy I	Mare & Foal	Witmer Cylinder
1.	50.75	59	26.5	24	0	14	21	2	5	5	27	24	±5	--	--	--	--	--	--	--	--	8	8	7	14	16-9.5	7
2.	54.25	62.25	28	25	-	--	--	--	--	--	--	--	-2	7-10	76	6	5	6	4	11	32	10	14	10.5	11	16-7	13
3.	56.25	74.5	31	27	0	4	22	0	3	5	25	41	+3	10-4	101	27	27	13	30	45	142	12	10	10.5	8	16-13.5	10
4.	56.75	70.5	27.25	25.5	-	7	4	6	7	12	33	31	+3	10-8	104	50	26	17	43	58	194	8	7	11	10	11-6	7.5
5.	54.75	63.75	26	23.5	-	23	4	10	6	7	24	25	±12	11-3	110	29	22	10	19	56	136	9	12	9	14	15-9.5	7.5
6.	--	--	--	--	--	8	11	3	8	12	24	34	--	10-3	98	31	27	13	32	47	150	--	14	13.5	8	--	10
7.	53.75	64.25	27	24.5	-	4	13	4	3	4	25	47	±6	11	107	26	30	20	33	58	167	9	15	12.5	8	15-13.5	12.5
8.	49.5	55.75	28	25.5	0	24	21	9	6	5	21	14	+4	7	70	16	20	5	21	33	95	8	14	7.5	12	11-16	--
9.	56	66.25	26.75	24.5	-	7	16	5	3	5	20	44	+4	10-8	104	35	32	14	30	50	161	7	12	9	14	10-9.5	11.5
10.	56	69	28.5	26	-	9	1	4	9	8	26	43	±14	14-10	145	56	33	23	42	95	249	12	18	13.5	14	16-13.5	10
11.	58.25	82.5	30.5	28	0	10	12	2	4	7	29	36	±11	10-6	102	48	33	17	39	64	201	8	15	8	6	16-13.5	8.5
12.	54.75	68.75	29	25.5	0	5	15	3	10	6	18	43	±3	10-7	103	37	19	10	34	57	157	8	18	14.5	10	16-13.5	10
13.	52	61	28	26.5	-	12	54	4	2	1	7	20	-2	--	--	7	5	5	-26	7	-2	6	14	7	8	8-5	11
14.	55.25	78.25	29.75	27	0	7	25	2	5	2	17	42	-2	10	98	37	22	16	33	51	159	7	12	10	11	10-9.5	8.5
15.	52.25	68.5	27.5	25.5	±	10	20	3	8	5	17	37	-4	8-11	89	35	14	15	14	36	114	10	14	9.5	10	11-9.5	8.5
16.	59.25	85.5	30	27	0	18	0	1	6	6	30	39	±3	10	98	32	24	16	26	57	155	10	14	14	12	15-9.5	10
17.	55	72	28	26.25	0	4	41	0	0	9	15	31	+7	--	--	35	13	3	23	48	122	7	14	10	14	16	9
18.	54.5	68.25	26.75	24.5	0	7	29	3	4	3	20	34	0	10-3	102	41	21	13	42	96	213	8	14	9.5	14	11-9.5	8.5
19.	53.25	58.75	27.5	25	-	13	14	5	4	4	19	41	-8	11-1	111	31	25	12	21	45	134	8	10	14	11	15.9.5	10
20.	54	63.25	28	25.5	-	5	20	5	6	4	18	42	±5	10-1	101	35	20	12	23	47	137	6	14	11.5	14	12-9.5	10.5
21.	56.5	75	28	26	-	6	10	3	7	4	26	44	-1	10-3	102	32	27	15	20	45	139	8	14	15.5	7	13-14	10
22.	53.25	65.5	27	24.5	0	11	11	1	4	3	29	41	+4	9-9	103	43	17	10	40	55	165	9	14	10	9	13-9.5	12
23.	58.25	90.25	28.5	26	±	19	0	2	5	9	20	45	±18	10-8	107	49	14	11	33	52	159	9	12	12.5	14	16	12.5
24.	50	55.25	26	24	-	12	21	3	5	8	21	30	±3	9-9	97	32	9	5	22	40	108	9	15	13.5	14	16-9.5	9
25.	51	62	27.75	25	0	12	41	3	6	2	15	21	±12	7-6	72	11	10	7	12	21	61	9	12	15	14	9-6	10
26.	51.5	65.75	28	24.5	0	18	11	3	8	5	21	34	±10	8-10	95	17	21	5	-10	42	75	7	10	11	8	16-13.5	10

Read Table thus: Boy 1 has a height of 50.75 inches, weight 59 pounds, inspiration of 26.5 inches, expiration of 24 inches, nutrition is normal, 14 individual responses, 21 questionable responses, 2 responses based on .1% of 1000, 5 responses on .2%, 5 responses on .6%, 27 responses on 1.6%, and 24 responses of over 10%, a score of 5 extroverted, did not take the intelligence tests or the achievement tests, a mental age of 8 years on the Seguin Formboard, a mental age of 8 years on the Knox Cube test, a mental age of 7 years on the Porteus Maze test, a mental age of 14 years on Healy Completion I, a mental age of 16 years on the time and a mental age of 9.5 on the errors of Mare and Foal test, a mental age of 7 years on the Witmer Cylinder test.

TABLE IX

PHYSICAL, MENTAL, EMOTIONAL, AND EDUCATIONAL DEVELOPMENT OF TEN YEAR OLD CHILDREN (GIRLS)

	PHYSICAL INFORMATION					PERSONALITY								INTELLIGENCE		ACHIEVEMENT TESTS						PERFORMANCE TESTS					
								Kent-Rog.																			
Girl	Height	Weight	Insp.	Exp.	Nut.	0	?	.1	.2	.6	1.6	10	Intr-Extr.	M. A.	I. Q.	Read.	Arith. C.	Arith. R.	Lang.	Spelling	Total	Sequin	Knox Cube	Porteus Maze	Healy I	Mare & Foal	Witmer Cylinder
1.	53.25	63.25	25.5	23.5	-	5	12	5	4	3	27	44	±16	10-8	104	38	24	13	32	64	171	8	18	10.5	14	16-13.5	10
2.	53.5	58.5	25.5	23.5	-	6	10	5	3	7	23	46	-6	11-1	108	45	21	16	25	55	162	9	12	10	11	16-13.5	10
3.	52.25	52	24.75	23	-	8	3	5	8	8	25	43	-8	11-3	110	35	17	9	35	58	154	9	15	10.5	14	16-16	15
4.	53.75	62.25	26	23.5	-	37	10	4	8	0	16	25	±6	10-1	98	31	32	16	35	56	170	8	0	15	14	15-7	10.5
5.	53.75	63.75	26.5	24	0	6	8	1	8	10	25	42	±12	11-8	111	34	22	12	29	45	142	8	14	13.5	13	16-9.5	10
6.	56.25	65.75	27	24	-	5	8	4	5	4	20	54	-2	11-6	112	54	27	10	36	12	139	7	0	11.5	14	13-16	9
7.	53.75	55	25.5	24	-	11	0	7	8	12	19	43	0	11-8	114	41	30	17	24	56	168	7	14	10.5	10	16-13.5	10
8.	52.5	57.75	24.5	23	-	13	23	4	6	4	20	30	-4	9-10	101	28	19	13	22	52	134	7	15	12.5	12	16-13.5	11.5
9.	55.5	58.25	25.5	23	-	3	6	4	9	7	29	42	±4	12	120	50	28	18	39	64	179	8	14	16	10	16-13.5	9.5
10.	52	56.5	24	22	-	14	5	5	9	3	31	33	±10	10-5	104	24	23	12	30	44	133	6	12	9.5	10	8-9.5	8.5
11.	52.25	58.25	25.75	24	-	12	6	1	8	11	26	36	±22	10-4	103	--	--	--	--	--	171	7	12	7.5	11	16-13.5	8.5
12.	55.75	70.75	27	25	-	11	5	6	9	2	24	43	-4	10-11	109	29	21	11	32	44	137	7	14	8	10	10-5	10
13.	54.75	72.5	25.25	23.5	0	19	6	5	8	5	20	37	±4	9-9	97	19	32	11	3	38	103	9	7	7.5	14	16-16	15
14.	51	59.5	27	24	0	6	25	3	8	6	20	32	±12	--	--	18	13	3	11	38	83	6	0	5.5	14	15-13.5	9.5
15.	52.5	60.75	26.25	24.5	-	17	4	8	14	7	19	31	±8	7-9	78	17	8	2	2	16	45	7	10	8	8	12-7	10
16.	54	73.25	28	26	0	2	14	5	8	10	32	29	±16	11-6	115	32	25	9	39	61	166	9	14	9.5	11	16	13
17.	51.75	55.75	25.5	23	-	2	8	3	5	6	37	39	±16	12	120	40	22	10	38	49	159	8	10	10.5	14	16	Adult
18.	50	48.75	24.5	22	-	--	--	--	--	--	--	--	--	9-9	95	22	12	8	16	45	103	--	10	--	14	--	10
19.	51.25	54.25	24.75	22	-	7	3	1	4	9	30	46	±4	11-8	114	38	31	16	46	50	181	9	18	8.5	14	16-16	12.5
20.	57.25	94	29.75	26.75	±	11	12	6	12	12	20	27	-4	10-1	101	20	12	5	14	28	79	6	14	10.5	12	16-9.5	10
21.	50.75	56	24	22	-	11	22	5	8	5	27	22	±3	8-9	87	16	19	11	10	27	83	8	8	8	14	16-9.5	10
22.	53	69	27	25	0	8	40	1	0	4	23	24	--	8	78	13	8	6	1	15	43	7	8	--	8	13-7	9
23.	52.5	72	28	26	0	10	10	0	6	9	25	40	±1	--	--	44	12	8	39	48	151	8	9	11	10	14	9

Read Table thus: Girl 1 has a height of 53.25 inches, weight 63.25 pounds, inspiration 25.5 inches, expiration 23.5 inches, nutrition is below normal, 5 individual responses, 12 questionable responses, 5 responses based on .1% of 1000, 4 responses of .2%, 3 responses of .6%, 27 responses of 1.6%, 44 responses of over 10%, a score of 16 extroverted, a mental age of 10 years and 8 months, an I.Q. of 104, a score of 38 in reading, a score of 24 in arithmetic computation, a score of 13 in arithmetic reasoning, a score of 32 in language, a score of 64 in spelling, a score of 171 for a total on the tests, a mental age of 8 years on Seguin form-board, a mental age of 18 years on Knox Cube test, a mental age of 10.5 years on Porteus Maze, a mental age of 14 years on Healy Completion I, a mental age of 16 years on the time and a mental age of 13.5 years on the errors of Mare and Foal test, a mental age of 10 years on the Witmer Cylinder test.

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BIBLIOGRAPHY

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APPENDIX

KENT-ROSANOFF FREE ASSOCIATION TEST

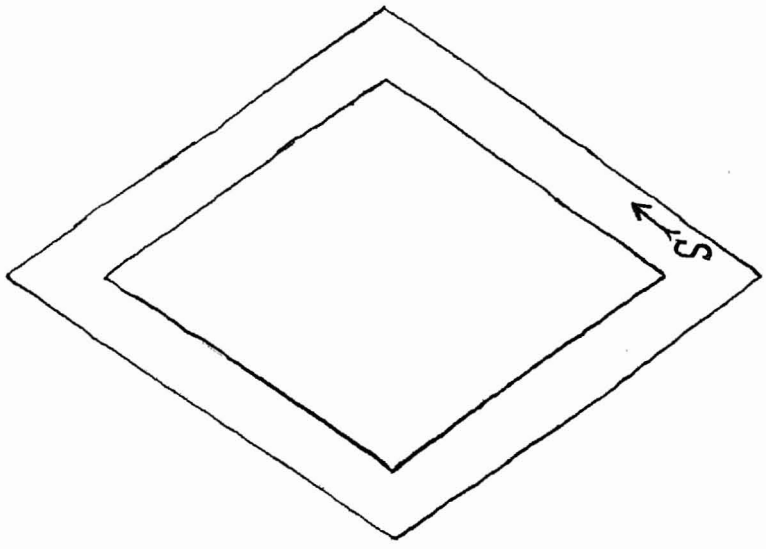
LIST OF ONE HUNDRED STIMULUS WORDS

1.	table	26.	wish	51.	stem	76.	bitter
2.	dark	27.	river	52.	lamp	77.	hammer
3.	music	28.	white	53.	dream	78.	thirsty
4.	sickness	29.	beautiful	54.	yellow	79.	city
5.	man	30.	window	55.	bread	80.	square
6.	deep	31.	rough	56.	justice	81.	butter
7.	soft	32.	citizen	57.	boy	82.	doctor
8.	eating	33.	foot	58.	light	83.	loud
9.	mountain	34.	spider	59.	health	84.	thief
10.	house	35.	needle	60.	bible	85.	lion
11.	black	36.	red	61.	memory	86.	joy
12.	mutton	37.	sleep	62.	sheep	87.	bed
13.	comfort	38.	anger	63.	bath	88.	heavy
14.	hand	39.	carpet	64.	cottage	89.	tobacco
15.	short	40.	girl	65.	swift	90.	baby
16.	fruit	41.	high	66.	blue	91.	moon
17.	butterfly	42.	working	67.	hungry	92.	scissors
18.	smooth	43.	sour	68.	priest	93.	quiet
19.	command	44.	earth	69.	ocean	94.	green
20.	chair	45.	trouble	70.	head	95.	salt
21.	sweet	46.	soldier	71.	stove	96.	street
22.	whistle	47.	cabbage	72.	long	97.	king
23.	woman	48.	hard	73.	religion	98.	cheese
24.	cold	49.	eagle	74.	whiskey	99.	blossom
25.	slow	50.	stomach	75.	child	100.	afraid

MEDIAN INTERVALS FOR SCORING TESTS

Age 10:	Mare and Foal		Sequin Formboard	Healy I Completion
	Time	Errors	Time	Score
	38-35	2	16	422-444

Knox Cube Test	Witmer Cylinder
Number correct	Score
6.3	50



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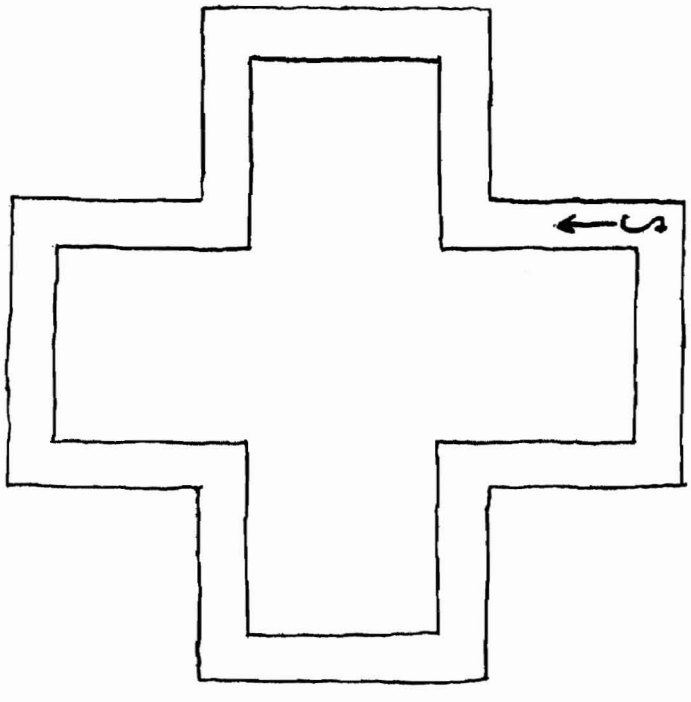

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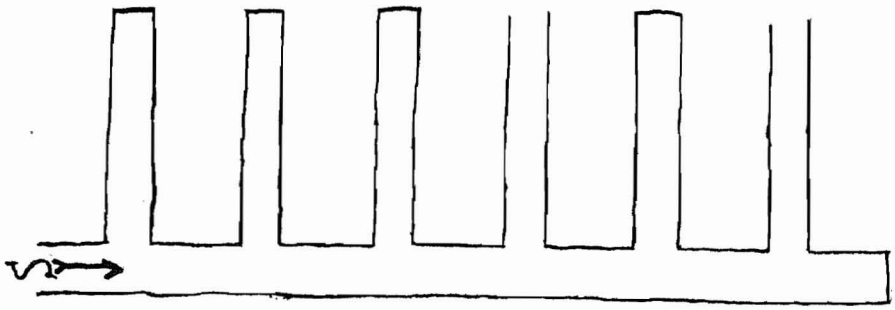

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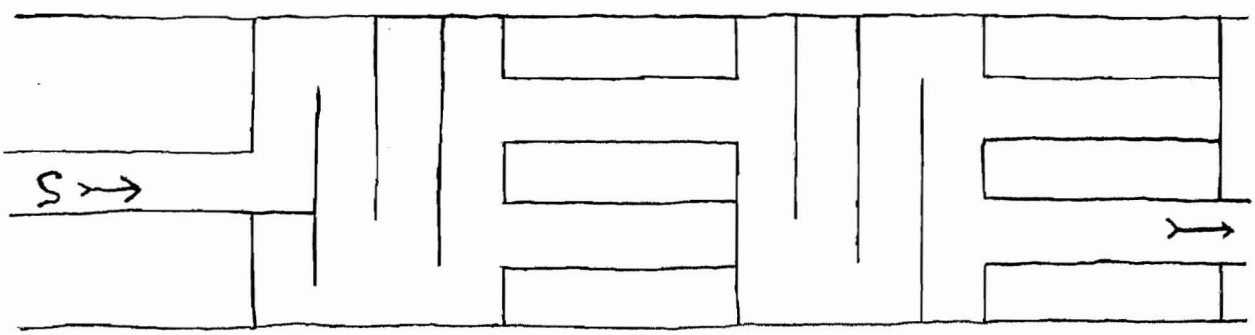

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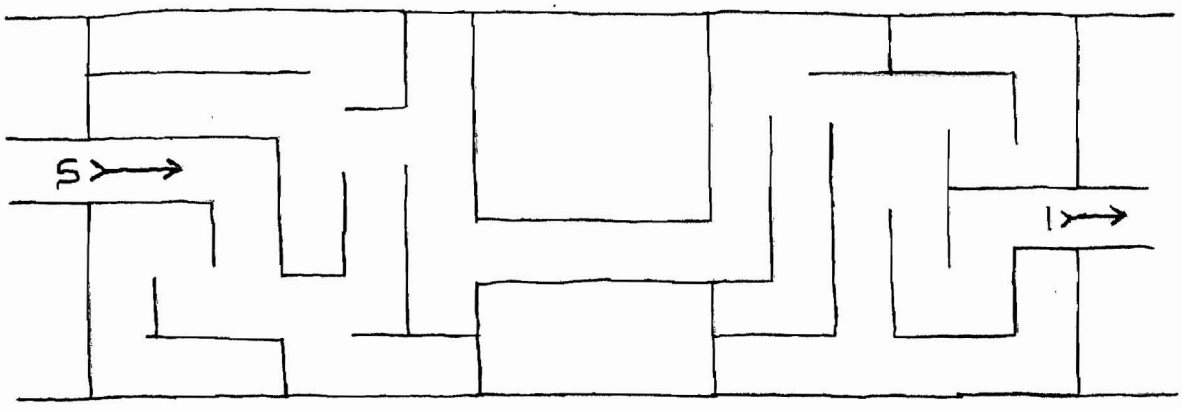

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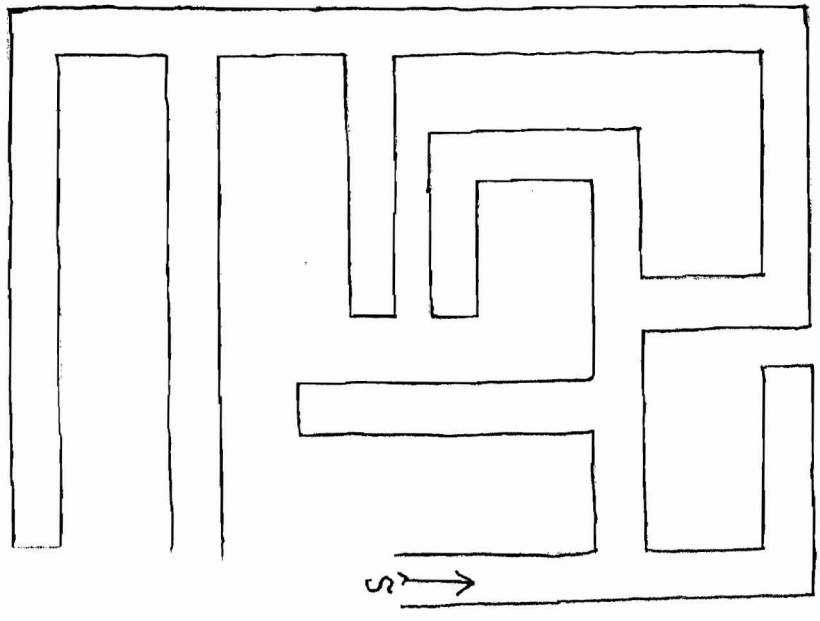

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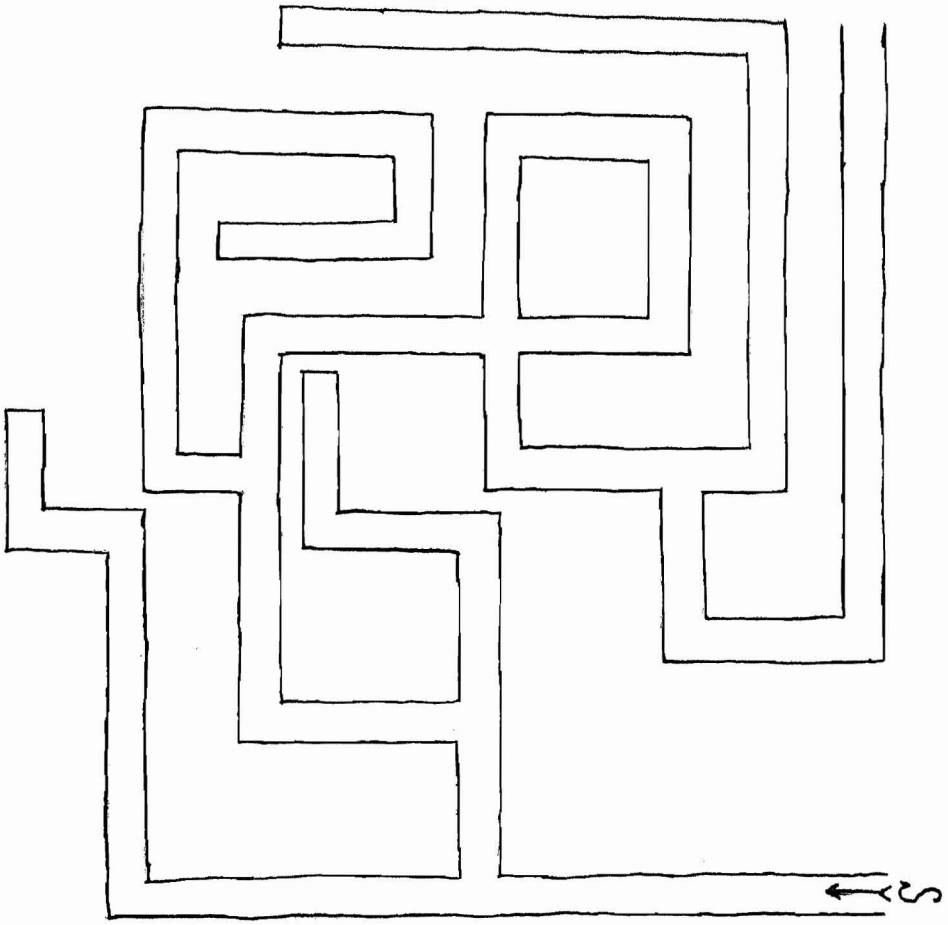

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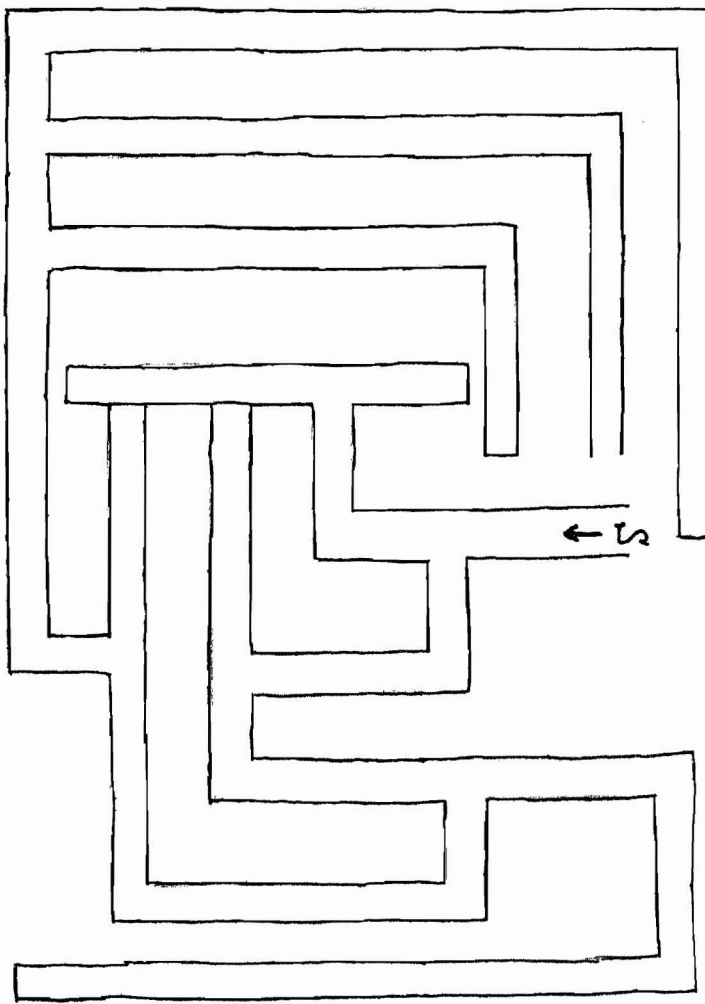

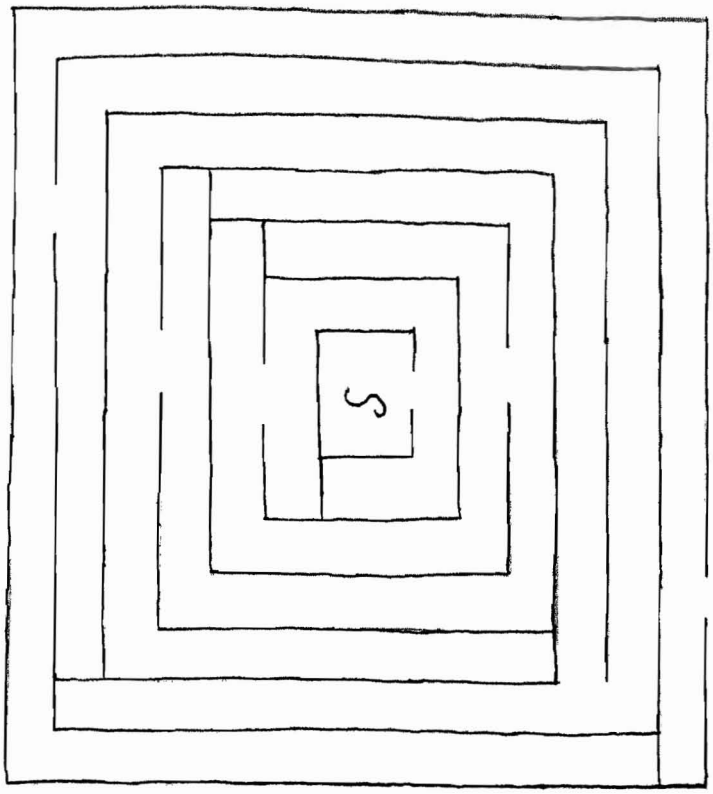

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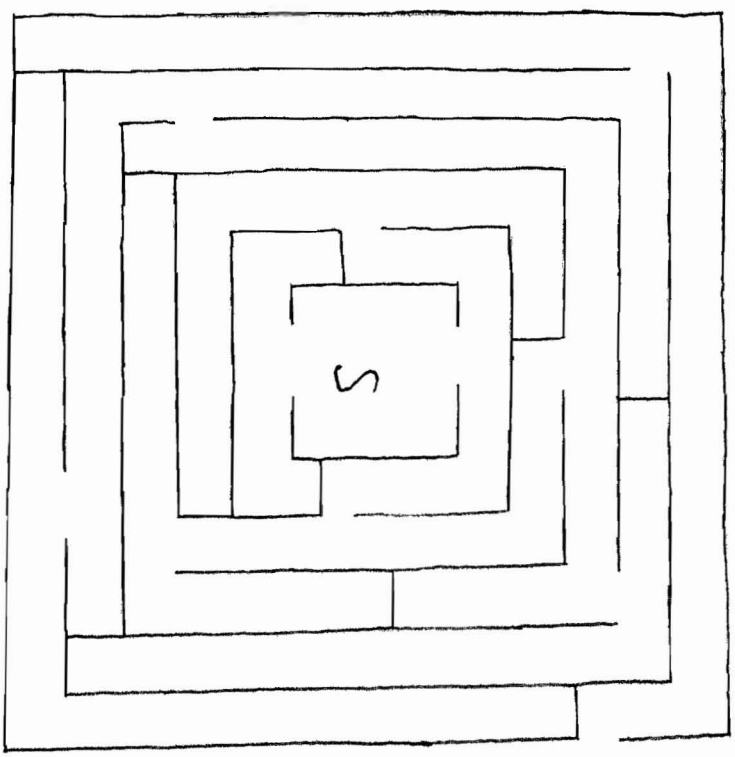

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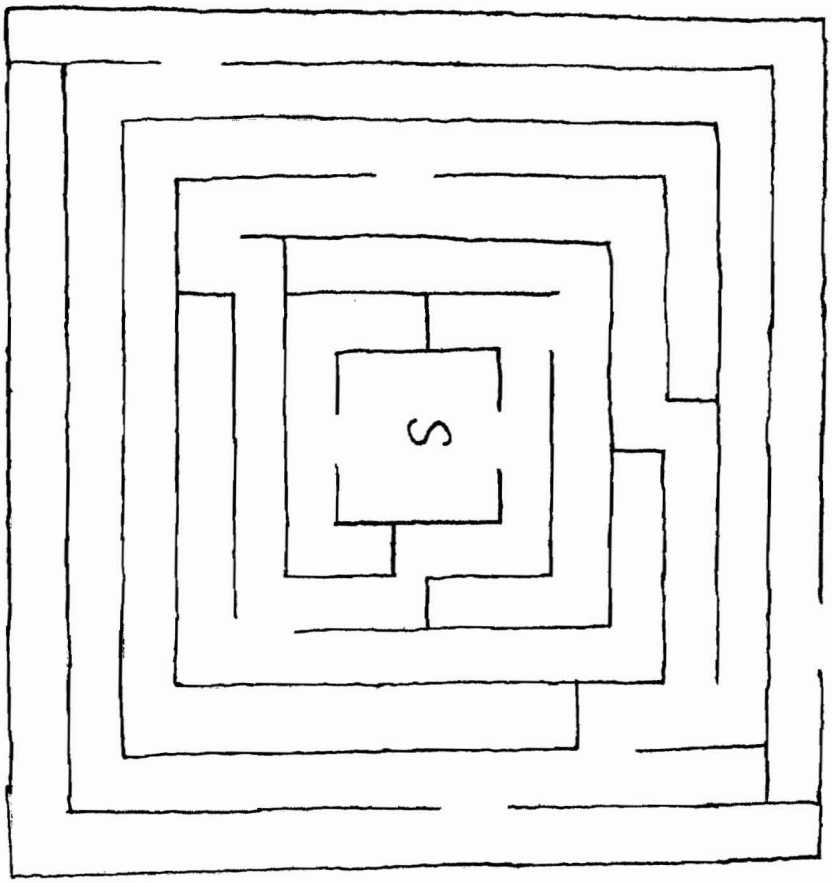

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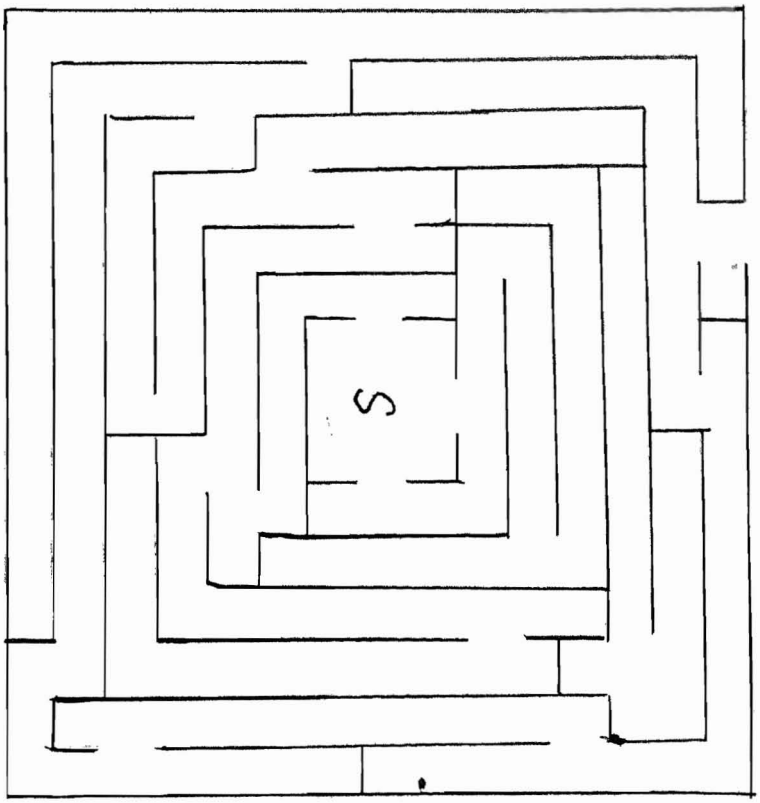

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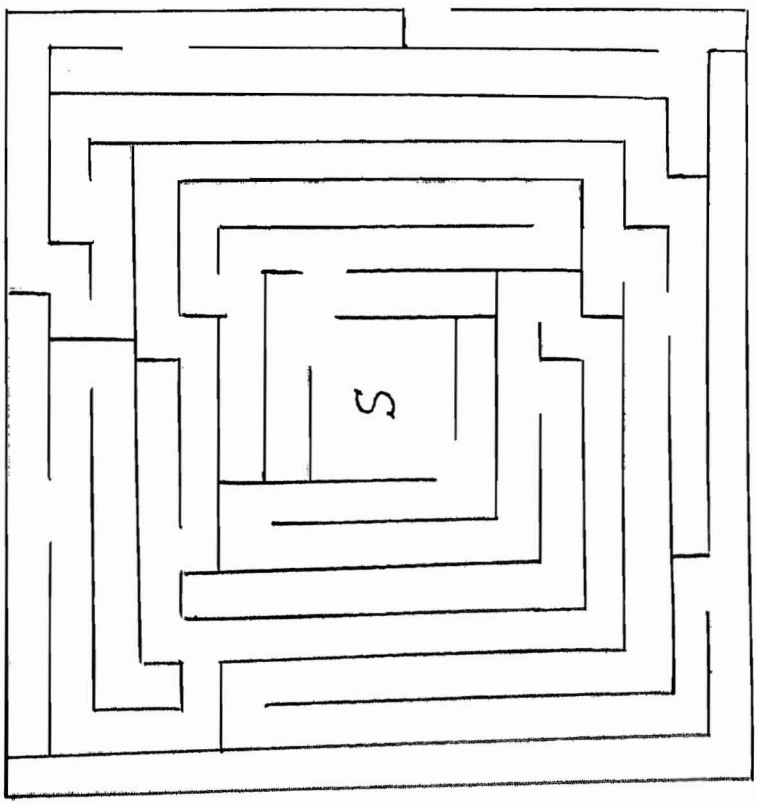

Porteus Test Vineland Revision Adult II

PERFORMANCE TEST SCORES
(BOYS)

Pupil No. 1

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	31	19	21	8	20
Knox Cube					
A – X – Y + B + C + D + E + F – G – H – I J				8	20
Porteus Maze					
3 + 4 + 5 + 6 ½ 7 ½ 8 ½ 9 ½ 10 – 11 – 12 14 I II				7	
Healy Pictorial Completion I					
Score 584				> 14	90
Mare and Foal	Time 25	Errors 2		> 16	85
Witmer Cylinder					
Trial	1	2	3		
Time	110	96	74	7	0

Pupil No. 2

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	20	16.5	18.5	10	50
Knox Cube					
A – X + Y + B + C + D + E + F + G + H – I – J –				14	80
Porteus Maze					
3 + 4 + 5 + 6 + 7 + 8 + 9 ½ 10 + 11 ½ 12 – 14 I I – II I I (inverted 4 I)				10.5	
Healy Pictorial Completion I					
Score 463				11	55
Mare and Foal	Time 21	Errors 3		> 16	95
Witmer Cylinder					
Trial	1	2	3		
Time	80	61	38	13	90

Pupil No. 3

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	18.5	14	25.5	12	80
Knox Cube					
A + X + Y + B + C + D – E + F – G – H – I J				10	50
Porteus Maze					
3 + 4 + 5 + 6 + 7 + 8 ½ 9 ½ 10 + 11 – 12 I I 13 I – II –				10.5	
Healy Pictorial Completion I					
Score 297				8	15
Mare and Foal	Time 19	Errors 1		> 16	100
Witmer Cylinder					
Trial	1	2	3		
Time	68	63	48	10	50

Pupil No. 4

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	30.5	22	21	8	10
Knox Cube					
A+X+Y+B−C+D+E−F−G−H I J				7	20
Porteus Maze					
3+4+5+6+7+8+9+10+11+12−14−I II				11	
Healy Pictorial Completion I					
Score 420				10	50
Mare and Foal	Time 34	Errors 4		11	60
Witmer Cylinder					
Trial	1	2	3		
Time	83	71	75	7.5	0

Pupil No. 5

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	22	21.5	18.5	9	30
Knox Cube					
A+X+Y+B+C+D+E+F−G−H−I J				12	70
Porteus Maze					
3+4+5+6+7+8+9+10−11−12 14 I II				9	
Healy Pictorial Completion I					
Score 515				14	75
Mare and Foal	Time 27	Errors 2		15	80
Witmer Cylinder					
Trial	1	2	3		
Time	73	68	79	7.5	0

Pupil No. 6

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time					
Knox Cube					
A+X+Y+B+C−D+E+F−G+H−I+J−				14	80
Porteus Maze					
3+4+5+6+7+8+9+10−11½12 12 14 (I−II 2 inverted				13.5	
Healy Pictorial Completion I					
Score 360				8	25
Mare and Foal	Time	Errors			
Witmer Cylinder					
Trial	1	2	3		
Time	110	63	48	10	60

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Pupil No. 7

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	27	20	18.5	9	30
Knox Cube					
A+X+Y+B+C+D+E+F−G+H−I+J−				15	90
Porteus Maze					
3+ 4+ 5+ 6+ 7+ 8+ 9½ 10+ 11− 12 13 14 I I II				12.5	
Healy Pictorial Completion I					
Score 333				8	25
Mare and Foal Time 27 Errors 1				15	80
Witmer Cylinder					
Trial	1	2	3		
Time	68	46	39	12.5	90

Pupil No. 8

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	30.5	29.5	19	8	20
Knox Cube					
A+X+Y+B+C+D+E−F+G+H−I−J−				14	80
Porteus Maze					
3+ 4+ 5+ 6½ 7+ 8½ 9½ 10− 11− 12 14 I II				7.5	
Healy Pictorial Completion I					
Score 498				12	65
Mare and Foal Time 34 Errors				11	60
Witmer Cylinder					
Trial	1	2	3		
Time					

Pupil No. 9

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	22	27	25.5	7	10
Knox Cube					
A+X+Y+B+C+D+E−F−G+H−I−J−				12	70
Porteus Maze					
3+ 4+ 5+ 6+ 7+ 8+ 9+ 10− 11− 12 14 I II				9	
Healy Pictorial Completion I					
Score 646				> 14	100
Mare and Foal Time 35 Errors 2				10	50
Witmer Cylinder					
Trial	1	2	3		
Time	43	63	55	11.5	80

Pupil No. 10

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	18.5	16.5	14	12	80
Knox Cube					
A+X+Y+B+C+D+E+F+G+H+I+J−				>18	100
Porteus Maze					
3+4+5+6+7+8+9+10½ 11+ 12+t13+tI2+tII1t				13.5	
Healy Pictorial Completion I					
Score 521				>14	80
Mare and Foal Time 16.5 Errors 1				>16	100
Witmer Cylinder					
Trial	1	2	3		
Time	61	56	48	10	50

Pupil No. 11

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	31.5	21	23	8	10
Knox Cube					
A+X+Y+B+C+D+E+F−G+H−I+J−				15	90
Porteus Maze					
3+4+5+6+7+8−9−10 11 12 14 I II				8	
Healy Pictorial Completion I					
Score 148				6	5
Mare and Foal Time 20 Errors 1				>16	100
Witmer Cylinder					
Trial	1	2	3		
Time	108	59	100	8.5	10

Pupil No. 12

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	25.5	20.5	22	8	15
Knox Cube					
A+X+Y+B+C+D+E+F+G+H−I−J+				18	100
Porteus Maze					
3+4+5+6+7+8+9+10½ 11½ 12+t13+tI1tII1t				14.5	
Healy Pictorial Completion I					
Score 427				10	45
Mare and Foal Time 21 Errors 1				>16	95
Witmer Cylinder					
Trial	1	2	3		
Time	75	56	50	10	50

Pupil No. 13

		Age Level	Percentile
Goddard Formboard			
Trial	1 2 3		
Time	33 33 26	6	0
Knox Cube			
A + X + Y + B + C + D + E − F + G + H − I − J −		14	80
Porteus Maze			
3 + 4 + 5½ 6 + 7 + 8½ 9 − 10 − 11 12 14 I II		7	
Healy Pictorial Completion I			
Score 297		8	15
Mare and Foal	Time 45 Errors 6	8	25
Witmer Cylinder			
Trial	1 2 3		
Time	80 55 45	11	70

Pupil No. 14

		Age Level	Percentile
Goddard Formboard			
Trial	1 2 3		
Time	34 30.5 24	7	10
Knox Cube			
A + X + Y + B + C + D + E + F − G − H − I J		12	70
Porteus Maze			
3 + 4 + 5 + 6 + 7 + 8 + 9½ 10 + 11½ 12 − 14 − I II		10	
Healy Pictorial Completion I			
Score 459		11	55
Mare and Foal	Time 35 Errors 2	10	50
Witmer Cylinder			
Trial	1 2 3		
Time	74 55 56	8.5	30

Pupil No. 15

		Age Level	Percentile
Goddard Formboard			
Trial	1 2 3		
Time	27 19 16.5	10	50
Knox Cube			
A + X + Y + B + C + D + E + F − G + H − I − J −		14	80
Porteus Maze			
3 + 4 + 5 + 6 + 7 ½ 8 + 9 + 10 ½ 11½ 12 − 14 − I II		9.5	
Healy Pictorial Completion I			
Score 436		10	50
Mare and Foal	Time 34 Errors 2	11	60
Witmer Cylinder			
Trial	1 2 3		
Time	75 61 75	8.5	0

Pupil No. 16

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	24	22	16	10	50
Knox Cube					
A–X+Y+B+C+D+E+F+G–H+I–J–				14	80
Porteus Maze					
3+4+5+6+7+8+9–10+11+12 13 14 I–II				14	
Healy Pictorial Completion I					
Score 498				12	65
Mare and Foal	Time 27	Errors 2		15	80
Witmer Cylinder					
Trial	1	2	3		
Time	75	60	50	10	50

Pupil No. 17

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	25	22	26	7	10
Knox Cube					
A+X+Y+B+C+D+E+F–G+H–I–J–				14	80
Porteus Maze					
3+4+5+6+7+8+9+10+11–12–14 I II				10	
Healy Pictorial Completion I					
Score 582				> 14	90
Mare and Foal	Time 25	Errors 2		> 16	100
Witmer Cylinder					
Trial	1	2	3		
Time	69	53	85	9	30

Pupil No. 18

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	26	25.5	19	8	20
Knox Cube					
A+X+Y+B+C+D+E+F+G–H–I–J				14	80
Porteus Maze					
3+4+5+6+7+8+9+10½11–12–14 I II				9.5	
Healy Pictorial Completion I					
Score 584				> 14	90
Mare and Foal	Time 34	Errors 2		11	60
Witmer Cylinder					
Trial	1	2	3		
Time	80	58	58	8.5	20

Pupil No. 19

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	28	19.5	24	8	20
Knox Cube					
A+X+Y−B+C+D−E+F+G−H−I−J				10	50
Porteus Maze					
3+4+5+6+7+8+9+10½11+12 12 14 I I II 2				14	
Healy Pictorial Completion I					
Score 458				11	55
Mare and Foal	Time 27.5	Errors 2		15	80
Witmer Cylinder					
Trial	1	2	3		
Time	53	49	56	10	55

Pupil No. 20

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	36	27	27.5	6	0
Knox Cube					
A+X+Y+B+C+D+E−F+G+H−I−J−				14	80
Porteus Maze					
3+4+5+6+7+8+9+10½11− 12 3 14 3 I − II −				11.5	
Healy Pictorial Completion I					
Score 566				>14	85
Mare and Foal	Time 32	Errors 2		12	70
Witmer Cylinder					
Trial	1	2	3		
Time	60	110	48	10.5	60

Pupil No. 21

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	25	20	21	8	15
Knox Cube					
A+X+Y+B+C+D−E+F+G+H−I−J−				14	80
Porteus Maze					
3+4+5+6+7+8+9−10+11½12 I 14 I 2 I II −				15.5	
Healy Pictorial Completion I					
Score 218				7	10
Mare and Foal	Time 30	Errors		13	75
Witmer Cylinder					
Trial	1	2	3		
Time	61	48	52	10	50

55

Pupil No. 22

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	24	17	21	9	40
Knox Cube					
A+X+Y+B+C-D+E+F-G+H-I-J+				14	80
Porteus Maze					
3+4+5+6+7+8+9+10-11½12t14-I-II				10	
Healy Pictorial Completion I					
Score 382				9	35
Mare and Foal	Time 29	Errors 2		13	80
Witmer Cylinder					
Trial	1	2	3		
Time	100	72	43	12	80

Pupil No. 23

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	25	18	17	9	40
Knox Cube					
A+X+Y+B+C+D+E+F-G-H I J				12	70
Porteus Maze					
3+4+5+6+7-8+9½10+11+12-14t12tI2tII t				12.5	
Healy Pictorial Completion I					
Score 646				>14	100
Mare and Foal	Time 12	Errors		>16	100
Witmer Cylinder					
Trial	1	2	3		
Time	50	40	63	12.5	80

Pupil No. 24

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	21	22	17	9	40
Knox Cube					
A+X+Y+B+C+D+E+F-G+H+I-J-				15	90
Porteus Maze					
3+4+5+6+7½8+9+10½11½12/t14 t I t II —				13.5	
Healy Pictorial Completion I					
Score 578				>14	90
Mare and Foal	Time 23	Errors 2		>16	90
Witmer Cylinder					
Trial	1	2	3		
Time	76	85	54	9	30

Pupil No. 25

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	30	28	18.5	9	30
Knox Cube					
A + X + Y + B + C − D + E + F − G + H − I − J −				12	70
Porteus Maze					
3 + 4 + 5 + 6 + 7 ½ 8 + 9 + 10 + 11 − 12 2 14 I I2 II +				15	
Healy Pictorial Completion I					
Score 584				>14	90
Mare and Foal	Time 41	Errors 4		9	35
Witmer Cylinder					
Trial	1	2	3		
Time	49	66	64	10	50

Pupil No. 26

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	29.5	28	22	7	10
Knox Cube					
A − X + Y + B + C + D + E + F − G − H − I J				10	50
Porteus Maze					
3 + 4 + 5 + 6 + 7 + 8 ½ 9 + 10 + 11 + 12 4 14 − I − II				11	
Healy Pictorial Completion I					
Score 299				8	15
Mare and Foal	Time 26	Errors 1		>16	85
Witmer Cylinder					
Trial	1	2	3		
Time	70	49	55	10	50

Pupil No. _____

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time					
Knox Cube					
A X Y B C D E F G H I J					
Porteus Maze					
3 4 5 6 7 8 9 10 11 12 14 I II					
Healy Pictorial Completion I					
Score					
Mare and Foal	Time	Errors			
Witmer Cylinder					
Trial	1	2	3		
Time					

PERFORMANCE TEST SCORES

(GIRLS)

Pupil No. 1

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	33	21.5	23.5	8	10
Knox Cube					
A+ X+ Y+ B+ C+ D+ E+ F+ G+ H− I+ J−				18	100
Porteus Maze					
3+ 4+ 5+ 6+ 7+ 8+ 9+ 10½ 11+ 12− 14 3t I II				10.5	
Healy Pictorial Completion I					
Score 593				>14	95
Mare and Foal Time 25 Errors 1				>16	90
Witmer Cylinder					
Trial	1	2	3		
Time	58	49	59	10	50

Pupil No. 2

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	29	24.5	18.5	9	30
Knox Cube					
A− X+ Y+ B+ C+ D+ E+ F− G+ H− I− J−				12	70
Porteus Maze					
3+ 4+ 5+ 6½ 7+ 8+ 9+ 10½ 11+ 12− 14 3t I II F inverted				10	
Healy Pictorial Completion I					
Score 446				11	55
Mare and Foal Time 16.5 Errors 1				>16	100
Witmer Cylinder					
Trial	1	2	3		
Time	61	58	50	10	50

Pupil No. 3

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	33	21	18	9	30
Knox Cube					
A+ X+ Y+ B+ C+ D− E+ F− G+ H− I+ J+				15	90
Porteus Maze					
3+ 4+ 5+ 6+ 7+ 8+ 9 ½ 10½ 11− 12 3t 14 4 I− II−				10.5	
Healy Pictorial Completion I					
Score 583				>14	90
Mare and Foal Time 15.5 Errors 0				>16	100
Witmer Cylinder					
Trial	1	2	3		
Time	46	45	41	15	75

Pupil No. 4

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	29	22	21	8	10
Knox Cube					
A—X—Y—B C D E F G H I J				0	0
Porteus Maze					
3+4+5+6+7+8+9+10+11+12+ 14 13 I 2 II−				15	
Healy Pictorial Completion I					
Score 646				> 14	95
Mare and Foal	Time 26.5	Errors 3		15	85
Witmer Cylinder					
Trial	1	2	3		
Time	70	58	48	10.5	60

Pupil No. 5

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	28	24.5	19.5	8	20
Knox Cube					
A+X+Y+B+C+D+E+F−G−H−I+J−				14	80
Porteus Maze					
3+4+5+6+7+8+9+10+11+12 4 13 14 2 I I II−				13.5	
Healy Pictorial Completion I					
Score 509				13	70
Mare and Foal	Time 19.5	Errors 2		> 16	100
Witmer Cylinder					
Trial	1	2	3		
Time	51	61	51	10	50

Pupil No. 6

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	32	22	22	7	10
Knox Cube					
A—X—Y—B C D E F G H I J				0	0
Porteus Maze					
3+4+5+6+7½8+9+10+11½12 4 13 14 I − II −				11.5	
Healy Pictorial Completion I					
Score 646				> 14	100
Mare and Foal	Time 29.5	Errors 0		13	80
Witmer Cylinder					
Trial	1	2	3		
Time	80	60	75	9	30

60

Pupil No. 7

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	30	22	22.5	7	10
Knox Cube					
A+X+ Y+B+ C+D+E +F−G+H −I−J−				14	80
Porteus Maze					
3+4+ 5+6+ 7+8+ 9½ 10½ 11½ 12+ 14− I− II				10.5	
Healy Pictorial Completion I					
Score 441				10	50
Mare and Foal	Time 20.5	Errors 1		>16	100
Witmer Cylinder					
Trial	1	2	3		
Time	75	50	66	10	50

Pupil No. 8

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	28	24	31.5	7	5
Knox Cube					
A+X+ Y+B+ C+D+E+F−G+H −I+J−				15	90
Porteus Maze					
3+4+ 5+6+ 7+ 8+9½ 10½ 11+ 12+ 14+ I− II−				12.5	
Healy Pictorial Completion I					
Score 498				12	65
Mare and Foal	Time 22	Errors 1		>16	95
Witmer Cylinder					
Trial	1	2	3		
Time	66	72	46	11.5	60

Pupil No. 9

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	20	21	19	8	20
Knox Cube					
A+X+ Y+B+C+D+E+F+G− H−I−J				14	80
Porteus Maze					
3+4+ 5+6+ 7+8+9+ 10½ 11+ 12+ 14+ I− II−				16	
Healy Pictorial Completion I					
Score 443				10	50
Mare and Foal	Time 15	Errors 1		>16	100
Witmer Cylinder					
Trial	1	2	3		
Time	80	55	65	9.5	40

Pupil No. 10

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	35	29	34	6	0
Knox Cube					
A + X + Y + B + C + D + E + F – G – H – I J				12	70
Porteus Maze					
3 + 4 + 5 + 6 + 7 + 8 + 9 + 10½ 11 – 12 – 14 I II				9.5	
Healy Pictorial Completion I					
Score 443				10	55
Mare and Foal	Time 45	Errors 2		8	25
Witmer Cylinder					
Trial	1	2	3		
Time	63	70	62	8.5	30

Pupil No. 11

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	32	27	22	7	10
Knox Cube					
A + X + Y + B + C + D + E + F – G – H – I J				12	70
Porteus Maze					
3 + 4 + 5 + 6 ½ 7 – 8 + 9 – 10 – 11 12 14 I II				7.5	
Healy Pictorial Completion I					
Score 464				11	55
Mare and Foal	Time 25	Errors 1		>16	100
Witmer Cylinder					
Trial	1	2	3		
Time	80	80	61	8.5	30

Pupil No. 12

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	22	28.5	28	7	10
Knox Cube					
A + X + Y + B + C + D + E + F + G – H – I – J				14	80
Porteus Maze					
3 + 4 + 5 + 6 + 7 + 8 + 9 – 10 – 11 12 14 I II				8	
Healy Pictorial Completion I					
Score 437				10	50
Mare and Foal	Time 38	Errors 5		10	50
Witmer Cylinder					
Trial	1	2	3		
Time	90	62	46	10	55

Pupil No. 13

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	24.5	18.5	26	9	30
Knox Cube					
A+ X+ Y+ B+ C− D+ E− F− G− H I J				7	20
Porteus Maze					
3+ 4+ 5+ 6 ½ 7+ 8+ 9− 10− 11 12 14 I II				7.5	
Healy Pictorial Completion I					
Score 560				> 14	85
Mare and Foal	Time 19.5	Errors		> 16	100
Witmer Cylinder					
Trial	1	2	3		
Time	56	52	37	15	90

Pupil No. 14

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	49	33	30	6	0
Knox Cube					
A− X− Y− B C D E F G H I J				0	0
Porteus Maze					
3+ 4+ 5+ 6− 7 ½ 8− 9− 10 11 12 14 I II				5.5	
Healy Pictorial Completion I					
Score 528				> 14	80
Mare and Foal	Time 29	Errors 1		13	80
Witmer Cylinder					
Trial	1	2	3		
Time	72	54	94	9.5	45

Pupil No. 15

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	29.5	22	30	7	10
Knox Cube					
A− X+ Y+ B+ C+ D+ E− F− G+ H− I− J−				10	50
Porteus Maze					
3+ 4+ 5+ 6− 7+ 8 ½ 9+ 10 ½ 11 12− 14 I II				8	
Healy Pictorial Completion I					
Score 367				8	30
Mare and Foal	Time 32	Errors 3		12	70
Witmer Cylinder					
Trial	1	2	3		
Time	75	62	48	10	55

Pupil No. 16

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	20.5	17	21.5	9	40
Knox Cube					
A+ X+ Y+ B+ C+ D+ E+ F− G+ H− I− J−				14	80
Porteus Maze					
3+ 4+ 5+ 6+ 7+ 8+ 9+ 10½ 11− 12− 14 I II				9.5	
Healy Pictorial Completion I					
Score 464				11	55
Mare and Foal	Time 16	Errors		>16	100
Witmer Cylinder					
Trial	1	2	3		
Time	73	42	45	13	80

Pupil No. 17

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	23.5	21.5	23	8	10
Knox Cube					
A− X− Y+ B+ C− D+ E+ F− G+ H+ I− J−				10	50
Porteus Maze					
3+ 4+ 5+ 6+ 7+ 8+ 9+ 10½ 11½ 12+ 14− I− II				10.5	
Healy Pictorial Completion I					
Score 578				>14	90
Mare and Foal	Time 18.5	Errors		>16	100
Witmer Cylinder					
Trial	1	2	3		
Time	58	35	31	16	100

Pupil No. 18

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time					
Knox Cube					
A+ X+ Y+ B+ C− D+ E− F− G+ H− I− J				10	50
Porteus Maze					
3 4 5 6 7 8 9 10 11 12 14 I II					
Healy Pictorial Completion I					
Score 578				>14	90
Mare and Foal	Time	Errors			
Witmer Cylinder					
Trial	1	2	3		
Time	80	50	65	10	50

Pupil No. 19

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	26.5	21	18	9	30
Knox Cube					
A + X + Y + B + C + D + E + F − G + H + I − J +				18	100
Porteus Maze					
3 + 4 + 5 + 6 + 7 + 8 + 9 ½ 10 − 11 − 12 14 I II				8.5	
Healy Pictorial Completion I					
Score 578				> 14	90
Mare and Foal Time 16 Errors				> 16	100
Witmer Cylinder					
Trial	1	2	3		
Time	70	58	41	12.5	80

Pupil No. 20

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	31	29.5	29	6	0
Knox Cube					
A + X + Y + B + C + D + E + F − G + H − I − J −				14	80
Porteus Maze					
3 + 4 + 5 + 6 ½ 7 + 8 + 9 − 10 ½ 11 ½ 12 3 (14 − I (t) II − (inverted 2t)				10.5	
Healy Pictorial Completion I					
Score 488				12	65
Mare and Foal Time 19 Errors 2				> 16	100
Witmer Cylinder					
Trial	1	2	3		
Time	67	39	43	15	90

Pupil No. 21

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	47.5	20.5	23.5	8	15
Knox Cube					
A + X + Y − B + C − D + E + F − G − H − I J				8	20
Porteus Maze					
3 + 4 + 5 + 6 ½ 7 ½ 8 + 9 + 10 − 11 − 12 14 I II				8	
Healy Pictorial Completion I					
Score 521				> 14	80
Mare and Foal Time 21 Errors 2				> 16	95
Witmer Cylinder					
Trial	1	2	3		
Time	170	60	49	10	50

Pupil No. 22

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	30	23	22	7	10
Knox Cube					
A+ X+ Y+ B+ C− D+ E− F− G − H I J				8	20
Porteus Maze					
3 4 5 6 7 8 9 10 11 12 14 I II					
Healy Pictorial Completion I					
Score 318				8	20
Mare and Foal	Time 29.5	Errors 3		13	75
Witmer Cylinder					
Trial	1	2	3		
Time	100	89	58	9	40

Pupil No. 23

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time	31.5	22	20	8	15
Knox Cube					
A− X+ Y+ B + C + D + E − F + G − H − I − J				9	50
Porteus Maze					
3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 − 11 + 12 + 14 − I − II				11	
Healy Pictorial Completion I					
Score 441				10	50
Mare and Foal	Time 22	Errors		> 14	95
Witmer Cylinder					
Trial	1	2	3		
Time	85	220	59	9	30

Pupil No. _____

				Age Level	Percentile
Goddard Formboard					
Trial	1	2	3		
Time					
Knox Cube					
A X Y B C D E F G H I J					
Porteus Maze					
3 4 5 6 7 8 9 10 11 12 14 I II					
Healy Pictorial Completion I					
Score					
Mare and Foal	Time	Errors			
Witmer Cylinder					
Trial	1	2	3		
Time					

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