CALIFORNIA TEST BUREAU

MANUAL

California Achievement Tests
Complete Battery

AND SEPARATE READING, ARITHMETIC, AND LANGUAGE TESTS

Upper Primary • GRADES H2-3-L4 • Forms W & X

DEVISED BY ERNEST W. TIEGS AND WILLIS W. CLARK

UPPER PRIMARY — MANUAL — GRADES H2-3-L4
CALIFORNIA ACHIEVEMENT TESTS — W X Y Z SERIES

Note: This is the complete manual for administering, scoring, and interpreting the California Achievement Tests, Upper Primary, 1957 Edition, whether published as a complete battery booklet or as separate Reading, Arithmetic, and Language booklets. See page 3 for a complete Table of Contents.

1963 NORMS *

* Tables 24 and 25 modified February 1965. Grade placement and other tables for CAT-UP remain the same.

1957 EDITION

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California Achievement Tests

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The Tests

The *California Achievement Tests* are designed for the measurement, evaluation, and diagnosis of school achievement. This series is composed of reliable and valid tests of skills and understandings in reading, arithmetic, and language. The items in the 1957 Edition were first rated for balance and appropriateness by competent curriculum and achievement test specialists. The separate elements of the battery were then integrated to yield meaningful and useful results.

The five levels of these batteries were carefully articulated to provide a sequential testing program from one level to the next. This important feature was given special care in standardizing the *California Achievement Tests*, 1957 Edition, and was maintained in the preparation of the 1963 norms. The continuity of the grade placement scale from the Lower Primary level upward was controlled by concurrent testing with the *California Short-Form Test of Mental Maturity*, 1963 Revision. The 1963 norms were based on a scaling procedure by which performance on the *California Achievement Tests* was related to performance on the 1963 Revision of the *California Short-Form Test of Mental Maturity*, which served as the criterion for controlling the achievement data. The achievement data used in the scaling procedures to establish the norms were obtained from a population sample representing a composite of the various curricular influences operating throughout the nation.

The joint administration of the *California Achievement Tests* and the *California Short-Form Test of Mental Maturity*, 1963 Revision, made possible estimates of Anticipated Achievement based on a nationwide standardization, controlled on grade placement, I.Q., and chronological age. Use of the Anticipated Achievement concept provides new avenues for evaluation and diagnosis of individual and class achievement.

The *California Achievement Tests* are available in equivalent forms on each level, designed for adequate measurement throughout the full range of ability to be found in almost any school grade group. Corresponding numbered items of equivalent forms cover identical principles, skills, knowledges, etc., on each level. The correct answer positions are the same on all forms at the same level, making possible diagnostic analysis and scoring with one set of keys. The test items are equated, so that only one set of normative data is needed at any one level.

Examinees may mark their responses in the booklets, on IBM machine-scoring answer sheets, on SCOREZE,[1] on Mark-Sense CAL-CARDS, or on Punch Out Cards.

[1] SCOREZE, devised by Ethel M. Clark, is a special double answer sheet, one-half of which is self-scoring and diagnostic (contains diagnostic categories for all items). The other half can be machine scored. The diagnostic portion of SCOREZE is usually retained for use by the teacher or counselor. SCOREZE was devised for exclusive use with California Test Bureau instruments.

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PART 1

Description of the Tests and Related Data

California Achievement Tests

DESCRIPTION OF THE TESTS

The *California Achievement Tests, Upper Primary,* are a series of comprehensive tests designed for the three-fold purpose of facilitating evaluation, educational measurement, and diagnosis.

The *California Achievement Tests* have been so designed that they may be used by teachers with a minimum of formal training in standardized testing and in diagnostic procedures as well as by specialists in the field. The tests may be administered, scored, and interpreted by following the appropriate directions in this manual.

For a discussion of the rationale and curricular comprehensiveness of the tests, see the section on reliability and validity on pages 8 to 14 of this manual. An explanation of potential uses of the instruments for educational diagnosis and educational measurement may be found in Part 2 on pages 15 to 23.

Each of the four alternate equivalent forms of the Upper Primary level of the *California Achievement Tests* is composed of three tests: Reading, Arithmetic, and Language.[1] These three tests are further divided into two parts each: the Reading Test consists of Reading Vocabulary and Reading Comprehension; the Arithmetic Test consists of Arithmetic Reasoning and Arithmetic Fundamentals; and the Language Test consists of Mechanics of English and Spelling. Then, as described below, the two parts of each test, with the exception of Spelling, are divided into sections.

READING VOCABULARY — TEST 1

The Reading Vocabulary Test consists of two sections — a test of word recognition and a test of the meaning of opposites. The forty-five items in this section sample five different essential functional elements which serve as an aid to diagnosing a pupil's specific difficulties in the area of reading vocabulary.

These elements test the pupil's ability to distinguish between identical and different initial, middle, and final sounds and to recognize words that are completely unrelated in sound. The test also measures basic vocabulary through recognition of opposites.

Reading vocabulary is an essential factor of a reading achievement test, since a good vocabulary is a necessary element in the development of reading comprehension skills. (See also the description of the Test of Word Form on page 6.)

[1] Four forms were used in the experimental work prior to publication. Only Forms W and X are published. Forms Y and Z are ready for publication if the demand warrants it.

WORD RECOGNITION — SECTION A

This section is made up of twenty sets of three words each. It includes words in lower case, capitals, and script. One of the three words in each set is pronounced by the examiner. The pupil responds by underlining the word pronounced. The items vary from those testing a recognition of gross differences in sound and word form to minor phonetic differences. Some of the word groups have identical initial sounds but different final or middle sounds, whereas some begin with dissimilar sounds but have ending sounds which are similar.

MEANING OF OPPOSITES — SECTION B

The twenty-five items in this section are presented in nine boxes, each of which contains two or three stimulus words, and opposite them, a response word for each, as well as one or two distracters. The pupil matches each key word with its opposite, indicating his response by drawing a line from one to the other.

The words used in this test range from simple, concrete terms to words representing abstract concepts, and are arranged in order of difficulty.

READING COMPREHENSION — TEST 2

Test 2 is divided into three sections — Following Directions, Reference Skills, and Interpretation of Material. These three sections, in turn, sample twelve functional elements of reading comprehension. An examination of the pupil's responses provides a guide for remedial action, as presented on pages 21 to 23 of this manual.

The test items are concerned with a variety of topics. This variation in treatment tends to maintain interest throughout the test. The stories presented in the Reading Comprehension Test have also been carefully selected for their intrinsic interest and appropriateness for readers at this level of development.

FOLLOWING DIRECTIONS — SECTION C

Section C is composed of fifteen items which require the pupil to follow specific directions. The ability to follow directions is one of the essential factors in carrying out study assignments, taking school tests, working on class projects, etc. The items are so constructed that all data necessary to determine the correct responses are given in the items themselves. This fact enables the pupil to reveal his level of ability to read and follow simple directions as well as directions involving the making of choices in selecting correct responses.

REFERENCE SKILLS — SECTION D

The fifteen items included in this section measure the extent to which the pupil possesses the skills needed for using reference materials in his school work.

These items test the pupil's knowledge of parts of books, his ability to interpret information found in a dictionary, table of contents, index, and graph, and his ability to alphabetize.

INTERPRETATION OF MATERIAL — SECTION E

Section E is made up of several brief stories, each of which is followed by a number of test items referring to its contents. The section contains a total of twenty-five items.

These test situations measure the pupil's ability to select best topics or central ideas, to read and comprehend directly stated facts, to make inferences and deductions, and to identify the correct sequence of given events.

The ability to interpret material and to make inferences indicates the pupil's readiness to profit from the basic printed materials of the curriculum for lower elementary grades.

WORD FORM

The Test of Word Form is not an integral part of the Reading Test and is not scored with it. It is presented for diagnostic purposes and is intended to be given to those pupils who score very low in the Reading Test.

Each of the items consists of two words, separated by a dotted line. If the two words are identical, the pupil marks S (for Same) on the line between them; if they are different words, he marks D. Various type forms are used in these items so that the diagnostic analysis may be divided as follows: identical or different words, capitals; identical or different words, lower case; identical or different words, script; and identical or different words, mixed forms. Also included are test situations in which the second word is a reversal of the first (e.g., saw - was).

This test is useful in determining specific problem areas in identifying words, such as incomplete knowledge of the alphabet, lack of visual discrimination, and reversals.

ARITHMETIC REASONING — TEST 3

The Arithmetic Reasoning Test consists of three sections—Meanings, Signs and Symbols, and Problems. The object of this test is to provide simple arithmetic situations which will quickly reveal the presence or absence of essential functional ability rather than to include problems in the solution of which differences in attention span and memory may operate as additional variables.

MEANINGS — SECTION A

The nineteen items in this test are designed to measure the extent to which the pupil understands number concepts, relative size of numbers, number sequence, and writing numbers. They also reveal his comprehension of the value of coins, ability to write different amounts of money, ability to tell time, familiarity with Roman numerals, and knowledge of the mathematics vocabulary relating to those concepts.

SIGNS AND SYMBOLS — SECTION B

Section B comprises eleven items designed to test the pupil's comprehension of the meanings and uses of the signs and symbols related to the fundamental arithmetic processes, as well as some of the abbreviations used to express measures of time, money, weight, and distance.

PROBLEMS — SECTION C

Ten items, ranging from simple one-step and two-step problems to sharing, averaging, and budgeting, are included in this section. In addition, pupils are asked how they worked some of the problems. These additional responses are not scored, but may be used for diagnostic purposes.

ARITHMETIC FUNDAMENTALS — TEST 4

The Arithmetic Fundamentals Test is divided into sections on addition, subtraction, multiplication, and division, each sampling the essential functional elements of one of these areas.

An examination of the pupil's specific responses provides an aid for diagnosing difficulties in arithmetic fundamentals. The use of the pupil's specific test responses as a guide for remedial action is presented on pages 21 to 23 of this manual.

ADDITION — SECTION D

The fifty addition items in this test reveal the extent of pupil mastery of addition combinations appropriate to this level. The diagnostic analysis reveals which combinations cause difficulty, and whether or not the pupil understands the function of zeros in addition. The first forty-five items consist of number facts, while the last five involve more complicated arithmetic functions.

SUBTRACTION — SECTION E

This test includes fifty subtraction facts, including zeros, and reveals the extent of pupil mastery of them. The first forty-five items consist of number facts, while the last five involve more complicated arithmetic functions.

MULTIPLICATION — SECTION F

Section F includes fifty multiplication combinations and reveals the extent of the pupil's knowledge of multiplication combinations, including zeros, in either the multiplier or the multiplicand. The first forty-five items consist of number facts while the last five involve more complicated arithmetic functions.

DIVISION — SECTION G

The fifty items in this section test the pupil's familiarity with basic division combinations, including zeros, and indicate the areas of division in which his difficulties lie. The first forty-five items consist of number facts, while the last five involve more complicated arithmetic functions. When division has not been taught, this section (4-G) should not be administered. Norms for Test 4, Arithmetic Fundamentals, do not include division scores. (See page 22 for uses of this section.)

MECHANICS OF ENGLISH — TEST 5

Test 5 consists of three sections—Capitalization, Punctuation, and Word Usage. The three sections sample thirteen different essential elements of the mechanics of English and provide an aid in diagnosing the specific difficulties encountered by pupils in this area.

CAPITALIZATION — SECTION A

This section is designed to measure the extent to which the pupil knows when to use capital letters. The first fifteen items are presented in unrelated sentences and the remaining five in a short story. Not more than one word in each item requires capitalization.

The essential elements tested in this section are: the pronoun "I," names of persons, names of months and days, names of places, first words of quotations, and first words of sentences. Those items which require no capital letters test over-capitalization.

PUNCTUATION — SECTION B

Section B consists of twenty items in unrelated sentences and a short story, devised to measure the pupil's knowledge of punctuation. The punctuation marks tested are periods, commas, and question marks. Those items which require no punctuation test over-punctuation.

WORD USAGE — SECTION C

The Word Usage section is made up of twenty sentences, each of which contains a correctly and an incorrectly used word enclosed in parentheses. The essential functional elements tested in this section are case, tense, number, and good usage.

SPELLING — TEST 6

Twenty-five carefully selected words are used in this test. These words are scaled in order of difficulty, and all of them appear in the first 500 words most frequently used in writing.[2] Spelling is included as a part of language because of its use as a means of written expression.

HANDWRITING

Handwriting is not an integral part of the Language Test, and handwriting norms are not presented in the table of language norms. However, standardized handwriting scales, both cursive and manuscript (to aid in objectifying ratings), are provided on the scoring key to enable the examiner to estimate the quality of handwriting of each pupil if he desires. This scale represents the average handwriting of a large number of pupils, sampled at each grade. It is a composite rating of several competent judges. In scoring handwriting samples, the examiner uses the first five words of the spelling test. The first five words of each test are sufficiently simple so that the confusing influence of word difficulty is usually avoided. Furthermore, the pupil does not know that these words are to be rated; hence, the test provides a valid testing situation.

CHANGES IN THE 1957 EDITION

The 1957 Edition of the *California Achievement Tests* represents some extensive changes in content and format from the previous edition. This is especially true with the Reading and Language Tests. The following paragraphs describe the changes in detail.

The 1950 Edition of the Primary Battery of the *California Achievement Tests* has been divided into the new Lower and Upper Primary levels. The type in the new tests has been enlarged for easier reading at these levels.

TEST 1 — READING VOCABULARY

The section on Word Form, formerly Section A, has been removed from the body of the test and placed at the end. Its function is now limited to diagnostic testing of pupils whose performance on the Reading Test is inadequate.

Section A, Word Recognition, was formerly Section B. The number of items has been increased from fifteen to twenty, and several of the items previously used have been replaced with new items.

Section B, Meaning of Opposites, was formerly Section C. It has been increased from twenty to twenty-five items, but the general format is similar to that of the previous edition.

TEST 2 — READING COMPREHENSION

Section C, Following Directions, which was formerly Section D, has been increased from ten to fifteen items. The first ten items are similar, and in some instances identical to those in the previous edition, but five more difficult items have been added.

Section D, Reference Skills, is an entirely new section. The table of contents items, which were part of Interpretations in the previous edition, are included in this section. Section D contains fifteen items.

Section E, Interpretation of Material, contains subject matter formerly tested in Sections E and F, Directly Stated Facts and Interpretations. The two former sections consisted of a total of twenty items, whereas the new Section E is composed of twenty-five items.

[2] Willis W. Clark, *A Spelling Dictionary for Elementary School Pupils* (Los Angeles: Los Angeles City School District, 1928), 62 pp.

TEST 3 — ARITHMETIC REASONING

Section A, Meanings, containing 19 items, includes what was formerly Sections A, B, and C, entitled Number and Sequence, Money, and Number and Time, respectively. The number of items has been reduced from 20 to 19. The item content is substantially the same as in previous editions.

Section B, Signs and Symbols, has been increased from 10 to 11 items. This was Section D of the previous edition.

Section C, Problems, which was formerly Section E, is substantially unchanged from the previous edition.

TEST 4 — ARITHMETIC FUNDAMENTALS

Section D, Addition, tests basically the same skills as Section F of the previous edition. The format has been changed, however. Formerly, five number facts were tested as a unit, with ten such units comprising the test. In the revision, each number fact is regarded as a unit. The first forty-five problems are number facts. The last five items differ in content from the last five-problem unit of the previous edition in that they test more complicated processes.

Sections E and F, Subtraction and Multiplication, were formerly Sections G and H. They have been changed in format and content in the same manner as Section D, Addition.

Section G, Division, is not found in the previous Primary test. The arrangement of items is similar to that of the other three sections in that the first forty-five problems are number facts and the last five require more complicated processes for their solution.

The section previously known as Problems has been eliminated, because the higher processes sampled in that section are now included in the last five problems of each of the four sections on fundamental skills.

TEST 5 — MECHANICS OF ENGLISH

Section A, Capitalization, has been increased from ten to twenty items. The first fifteen of these items are presented in unrelated sentences, the last five in a story somewhat similar to that of the previous edition. The poem has been omitted. In this revision, each line contains only one word to be capitalized, whereas the former edition contained some lines in which more than one word was to be capitalized.

Section B, Punctuation, has been increased from five to twenty items. The first sixteen items consist of unrelated sentences, while the last four are similar to the story found in the old edition. The poem has been omitted. While the former Section B tested periods, commas, question marks, and quotation marks, the new one tests only periods, commas, and question marks.

Section C, Word Usage, is a new section and includes twenty items.

TEST 6 — SPELLING

The Spelling Test has undergone no change.

RELIABILITY AND VALIDITY

RELIABILITY

Coefficients of reliability and related data for the ten profiled variables of the *California Achievement Tests, Upper Primary*, are given in Table 1. These data are compiled for a specific grade placement, grade 2.7 only. All reliability coefficients were computed using Kuder-Richardson formula 21 on the six principal tests of the *California Achievement Tests* and their totals. Data are given both in raw scores and grade placement units.

A coefficient of reliability of 0.98 results when the coefficients of the six tests are applied to the formula $r_{6c} = 6\,\frac{\bar{r}}{1 + 5\bar{r}}$ where $\bar{r}$ = average reliability for the six tests equally weighted.[3]

For most purposes of profile interpretation, the error of measurement expressed in grade placement units rather than in raw score units is used. In interpreting individual scores, the standard error of measurement is usually more helpful than the reliability coefficient. The coefficient of reliability provides only a general indication of the confidence which one can place in a measuring instrument. However, the standard error of measurement indicates how closely the individual's obtained score approximates his true score. For example, the chances are two to one that the examinee's score will not differ from the true score by more than the standard error of measurement, or nineteen to one by more than twice the standard error of measurement.

Thus, the standard errors of measurement in grade placement units in Table 1 are interpreted as follows: On the Reading Vocabulary Test, the chances are two to one that the examinee's grade placement on the test will not vary more than 2 months (0.2 G.P.), and nineteen to one that it will not vary more than 4 months from his true grade placement.

Because of the limited number of items (10-50) the section scores of each test should be used only as guides to indicate the presence of pupil difficulties. (See section on Diagnostic Analysis of Learning Difficulties, page 20.)

[3] Truman L. Kelley, *Interpretation of Educational Measurement* (New York: World Book Co., 1927), p. 73.

TABLE 1

RELIABILITY COEFFICIENTS AND RELATED DATA FOR THE CALIFORNIA ACHIEVEMENT TESTS, UPPER PRIMARY LEVEL, GRADE 2.7*

VARIABLE	RELIABILITY COEFFICIENT	RAW SCORE			GRADE PLACEMENT		
		Mean	Standard Deviation	Standard Error of Measurement	Mean	Standard Deviation	Standard Error of Measurement
1. Reading Vocabulary	.88	32.1	8.0	2.8	3.4	0.7	0.2
2. Reading Comprehension	.91	32.8	11.2	3.3	3.5	0.6	0.2
TOTAL READING	.94	64.9	18.3	4.4	3.5	0.7	0.2
3. Arithmetic Reasoning	.90	20.3	9.1	2.8	3.7	0.7	0.2
4. Arithmetic Fundamentals	.95	96.3	24.6	5.5	3.3	0.6	0.1
TOTAL ARITHMETIC	.96	116.5	31.4	11.8	3.5	0.6	0.2
5. Mechanics of English	.94	35.3	13.6	3.4	3.7	0.7	0.2
6. Spelling	.74	11.4	4.6	2.4	3.3	1.0	0.5
TOTAL LANGUAGE	.94	46.7	17.3	4.2	3.7	0.7	0.2
TOTAL BATTERY	.98	228.1	62.2	8.8	3.5	0.6	0.1

* Number of cases = 131.

VALIDITY

The discussion of validity evidence for the *California Achievement Tests, Upper Primary*, is presented under two headings: (1) Content Validity and (2) Construct Validity. In the first, the rationale for the test and the curriculum and item studies are reported. In the second, some important relationships between the *California Achievement Tests* and other tests and measures are presented.

CONTENT VALIDITY

The items in the *California Achievement Tests*, on which the validity ultimately depends, have been selected to measure many of the most universal subject-matter objectives of the curriculum. Curricula in science and social studies may differ widely in different school systems; but the basic skills, or tools of learning, are similar in all schools. Consequently, irrespective of the school, test scores on this battery will show the extent of pupil mastery of the fundamental skills in terms of various derived scores.

This does not mean, however, that these tests measure only the ability of the examinee to reproduce facts in a rote manner or to perform only the strictly mechanical tasks in the basic skills. Each of the *California Achievement Tests* abounds in items that sample the ability of the examinee to make intelligent use of the facts and skills at his disposal to solve new problems, to make inferences, and to draw conclusions.

The items of the *California Achievement Tests, Upper Primary*, have been developed over a period of years and through five editions. The items in the original edition, the *Progressive Achievement Tests*,[4] were selected after a careful study of the curriculum objectives of the then most up-to-date city and state courses of study. The later 1937, 1943, 1949, 1950, and the present 1957 Editions were based on tests given to pupils in all sections of the United States. The increased use made of this battery is in itself an indication of the general appropriateness and applicability of the content of the tests.

The *Primary* level of the 1950 Edition of the *California Achievement Tests* was used in grades 1 to L4. In the 1957 Edition, as has been previously pointed out, two levels were produced — the *Lower Primary* designed for grades 1 and 2 and the *Upper Primary* for grades H2-3-L4.[5] Most of the more difficult items of the former *Primary* level were incorporated into the *Upper Primary* of the 1957 Edition, while the easier items were used in the *Lower Primary* level. The Mechanics of English Test, which was very brief in the former *Primary*, is almost entirely new.

While many of the items of the original battery have survived the numerous revisions, all of the items included in the present edition have proven to be highly acceptable by modern standards. The items added to the 1950 Edition to produce the present edition were chosen after an examination of modern textbooks and courses of study.

Studies to assure statistical as well as curricular acceptability of the items were conducted. On the basis of this work, inferior items were removed and the acceptable ones retained. At the time the 1957 revision of the *California Achievement Tests* began, the items in the tests were arranged in four forms and administered to a common population. Time limits were removed so that each item could be read and attempted by all pupils in the sample. After the tests had been scored, the discriminating power and difficulty of each item were computed. On the basis of item difficulty and discrimination, as well as content, the items were rearranged into four comparable forms. The four forms were again administered to a new population and checked for comparability. A few final item shifts were then made.

The discriminating power of each item was determined for each grade by subtracting the per cent of correct responses of the bottom twenty-seven per cent of the pupils from the per cent of correct responses of the top twenty-seven per cent. The average discrimination for the two grades was

4 Ernest W. Tiegs and Willis W. Clark, *Progressive Achievement Tests* (Hollywood: Southern California School Book Depository, Ltd. [now California Test Bureau], 1934).

5 As a result of the 1963 re-norming, the grade range for the Upper Primary level was extended downward to include Grade H2. At Grade H2, the Lower Primary may be more appropriate for some groups.

then determined for each item. The average difficulty was obtained by determining the per cent of pupils in each grade that responded correctly to each item and then computing the average of the two grades. Test 3, Arithmetic Reasoning, revealed marked differences between grades 3 and 4. The data for each grade are, therefore, presented for that test. The data in Table 2 represent these statistics for the items combined into sections and then into tests for each of the four forms of the battery.[6]

The over-all discrimination of the four forms of the tests, expressed as phi coefficients, is reported in Tables 3 through 7. Phi coefficients are indices of the power of each item to discriminate between those who score high and those who score low in terms of the total score for each test. A study of these tables reveals that only 4 per cent of the Reading Test items, 17 per cent of the Arithmetic items, and 2 per cent of the Mechanics of English items have phi coefficients of less than .20. The inclusion of these items in the tests can be explained on two bases: (1) Some of the items were retained because of their curricular acceptability. An attempt has been made to cover a broad sampling of content in each test. This means that several items are included for which complete mastery should be expected. Examples are items testing the knowledge of simple arithmetic signs and items calling for choices between responses, such as "saw" and "seen," when they are used in sentences. (2) A number of the items were very easy or very difficult. High discrimination with items at these extremes is more rarely attained than with items of moderate difficulty. These items are, nevertheless, desirable, as most sections open with easy items designed to motivate the slower pupil and end with difficult items which provide a sufficient ceiling for the more advanced examinee.

In planning the 1957 *California Achievement Test* series, it was decided that the 1950 edition of the Spelling Test be reproduced without change. Since the 1950 Spelling Tests were devised, no known significant changes have occurred which would invalidate any of the spelling words. These tests were developed from a survey of seventeen basic word lists and spellers used in schools, and all words appeared in at least seven of the lists. Thus, the words of the 1950 Spelling Tests are unchanged in the 1957 *California Achievement Tests*. However, the Spelling Tests were administered in the 1957 standardization, and again in the 1963 re-norming.

[6] See footnote 1 on page 5.

TABLE 2

SUMMARY OF ITEM DATA FOR FORMS, TESTS, AND SECTIONS OF THE CALIFORNIA ACHIEVEMENT TESTS, UPPER PRIMARY*

TEST AND SECTION	NO. OF ITEMS	DIFFICULTY INDEX				DISCRIMINATION INDEX			
		W	X	Y	Z	W	X	Y	Z
1. Reading Vocabulary	45	69	70	70	70	50	50	50	50
A. Word Recognition	20	75	77	76	76	39	39	39	39
B. Meaning of Opposites	25	64	64	64	64	58	58	58	58
2. Reading Comprehension	55	67	67	66	67	39	39	38	38
C. Following Directions	15	76	76	75	76	38	38	38	38
D. Reference Skills	15	57	58	57	58	38	38	38	38
E. Interpretation of Material	25	68	67	65	68	40	40	38	39
3. Arithmetic Reasoning†	40	51	51	51	51	44	43	44	42
A. Meanings	19	60	61	61	60	49	47	46	45
B. Signs and Symbols	11	49	48	49	50	49	45	47	47
C. Problems	10	36	35	35	35	32	34	36	30
3. Arithmetic Reasoning‡	40	71	70	70	69	30	31	30	29
A. Meanings	19	83	82	82	80	28	28	29	28
B. Signs and Symbols	11	68	69	68	68	38	40	39	37
C. Problems	10	51	50	50	48	25	28	23	23
4. Arithmetic Fundamentals	175	75	75	75	75	30	29	30	30
D. Addition	50	90	90	90	90	16	15	16	16
E. Subtraction	50	81	81	80	81	34	34	34	34
F. Multiplication	50	54	55	54	54	32	29	31	30
G. Division	25	74	74	74	73	50	50	50	50
5. Mechanics of English	60	62	62	61	62	56	56	56	56
A. Capitalization	20	62	61	60	61	61	63	64	61
B. Punctuation	20	52	53	52	51	71	67	68	69
C. Word Usage	20	72	72	72	72	37	36	37	37

* The forms are W, X, Y, and Z. Item difficulty is expressed in per cent of success of the total group; item discrimination is the difference in per cent of success of the two extreme 27% groups, i.e., item difficulty differentials. The data for Test 4—Section G, Division, were obtained on the first twenty-five items only.

† Third grade data.

‡ Fourth grade data.

TABLE 3
DISTRIBUTION OF PHI COEFFICIENTS OF ITEMS OF THE READING VOCABULARY TEST UPPER PRIMARY, GRADES 3 AND 4*

PER CENT OF CORRECT RESPONSE	PHI COEFFICIENTS								
	.09 and below	.10-.19	.20-.29	.30-.39	.40-.49	.50-.59	.60-.69	.70 and above	Total
90-100	—	1	5	2	—	—	—	—	8
80-89	—	—	4	10	18	3	—	—	35
70-79	—	—	—	3	11	20	15	—	49
60-69	—	—	—	—	7	9	18	15	49
50-59	—	—	1	1	—	—	5	22	29
40-49	—	—	1	3	—	—	1	2	7
30-39	—	—	—	1	2	—	—	—	3
20-29	—	—	—	—	—	—	—	—	—
10-19	—	—	—	—	—	—	—	—	—
0-9	—	—	—	—	—	—	—	—	—
Total	—	1	11	20	38	32	39	39	180

* Read this table as follows: of a total of 180 items (in the four forms of the *Reading Vocabulary Test*) eight had a difficulty percentage of 90-100. Of these, one had a phi coefficient of .10-.19; five of .20-.29; and two of .30-.39.

TABLE 4
DISTRIBUTION OF PHI COEFFICIENTS OF ITEMS OF THE READING COMPREHENSION TEST UPPER PRIMARY, GRADES 3 AND 4

PER CENT OF CORRECT RESPONSE	PHI COEFFICIENTS								
	.09 and below	.10-.19	.20-.29	.30-.39	.40-.49	.50-.59	.60-.69	.70 and above	Total
90-100	—	4	8	4	—	—	—	—	16
80-89	—	—	8	20	11	1	—	—	40
70-79	—	1	3	7	12	24	6	—	53
60-69	—	—	—	8	11	15	7	3	44
50-59	—	2	1	4	6	4	5	—	22
40-49	1	1	1	11	9	3	3	1	30
30-39	—	3	1	5	2	—	3	—	14
20-29	—	—	1	—	—	—	—	—	1
10-19	—	—	—	—	—	—	—	—	—
0-9	—	—	—	—	—	—	—	—	—
Total	1	11	23	59	51	47	24	4	220

TABLE 5
DISTRIBUTION OF PHI COEFFICIENTS OF ITEMS OF THE ARITHMETIC REASONING TEST UPPER PRIMARY, GRADE 3

PER CENT OF CORRECT RESPONSE	PHI COEFFICIENTS								
	.09 and below	.10-.19	.20-.29	.30-.39	.40-.49	.50-.59	.60-.69	.70 and above	Total
90-100	—	8	—	—	—	—	—	—	8
80-89	—	—	1	4	5	—	—	2	12
70-79	—	—	—	2	5	11	4	—	22
60-69	—	—	2	—	2	3	10	8	25
50-59	—	—	—	2	2	9	3	2	18
40-49	—	—	1	1	13	3	4	3	25
30-39	—	—	—	2	3	6	3	1	15
20-29	—	—	—	4	4	7	—	—	15
10-19	—	—	2	2	1	—	—	—	5
0-9	3	6	5	1	—	—	—	—	15
Total	3	14	11	18	35	39	24	16	160

TABLE 5 (Continued)
DISTRIBUTION OF PHI COEFFICIENTS OF ITEMS OF THE ARITHMETIC REASONING TEST UPPER PRIMARY, GRADE 4

PER CENT OF CORRECT RESPONSE	PHI COEFFICIENTS								
	.09 and below	.10-.19	.20-.29	.30-.39	.40-.49	.50-.59	.60-.69	.70 and above	Total
100	4	—	—	—	—	—	—	—	4
90-99	1	14	27	1	—	—	—	—	43
80-89	2	4	3	4	4	—	—	—	17
70-79	—	2	2	7	9	6	3	—	29
60-69	—	—	2	2	5	10	6	5	30
50-59	—	—	—	—	2	4	7	1	14
40-49	—	—	—	—	1	1	1	—	3
30-39	—	—	1	—	1	—	—	—	2
20-29	—	—	1	—	3	1	—	—	5
10-19	—	—	1	3	2	—	—	—	6
0-9	—	3	3	1	—	—	—	—	7
Total	7	23	40	18	27	22	17	6	160

TABLE 6

DISTRIBUTION OF PHI COEFFICIENTS OF ITEMS OF THE ARITHMETIC FUNDAMENTALS TEST UPPER PRIMARY, GRADES 3 AND 4

PER CENT OF CORRECT RESPONSE	PHI COEFFICIENTS								
	.09 and below	.10-.19	.20-.29	.30-.39	.40-.49	.50-.59	.60-.69	.70 and above	Total
100	45	—	—	—	—	—	—	—	45
90-99	10	45	100	41	1	—	—	—	197
80-89	3	8	8	27	47	2	—	—	95
70-79	—	—	2	4	15	32	11	2	66
60-69	—	—	7	38	24	8	20	29	126
50-59	2	9	30	13	10	3	8	30	105
40-49	—	7	6	7	7	4	1	2	34
30-39	—	2	—	2	7	—	2	—	13
20-29	1	1	4	4	1	—	1	—	12
10-19	—	1	—	1	2	—	—	—	4
0-9	—	3	—	—	—	—	—	—	3
Total	61	76	157	137	114	49	43	63	700

TABLE 7

DISTRIBUTION OF PHI COEFFICIENTS OF ITEMS OF THE MECHANICS OF ENGLISH TEST UPPER PRIMARY, GRADES 3 AND 4

PER CENT OF CORRECT RESPONSE	PHI COEFFICIENTS								
	.09 and below	.10-.19	.20-.29	.30-.39	.40-.49	.50-.59	.60-.69	.70 and above	Total
90-100	1	—	3	1	—	—	—	—	5
80-89	—	—	—	8	14	1	—	—	23
70-79	1	1	—	4	7	31	21	—	65
60-69	—	1	1	4	10	10	12	19	57
50-59	—	—	1	2	1	1	5	24	34
40-49	—	—	—	—	—	—	—	31	31
30-39	—	—	4	3	1	—	4	4	16
20-29	—	—	—	3	1	3	—	—	7
10-19	—	—	1	—	1	—	—	—	2
0-9	—	—	—	—	—	—	—	—	—
Total	2	2	10	25	35	46	42	78	240

TABLE 8

CORRELATION COEFFICIENTS AND RELATED DATA FOR THE CAT, UPPER PRIMARY LEVEL, AND THE CTMM-SF, LEVEL 1, GRADE 3*

TESTS	CAT		COEFFICIENTS
	Mean (G.P.)	S.D. (G.P.)	I.S.I.† r
Reading Vocabulary	3.9	0.7	.42
Reading Comprehension	3.8	0.5	.46
TOTAL READING	3.8	0.5	.47
Arithmetic Reasoning	3.8	0.5	.47
Arithmetic Fundamentals	3.7	0.6	.34
TOTAL ARITHMETIC	3.7	0.5	.41
Mechanics of English	3.7	0.6	.37
Spelling	3.7	0.8	.31
TOTAL LANGUAGE	3.8	0.6	.40
TOTAL BATTERY	3.7	0.4	.48

* N = 663; A.G.P. = 3.1; C.A. = 102 months; Mean I.S.I. = 116; S.D. = 12.0.

† For discussion of I.S.I., see page 39 of this Manual.

CONSTRUCT VALIDITY

The strong positive relationship between school achievement and intelligence or mental maturity has long been recognized. This is illustrated in Table 8, which gives a summary of mean grade placements for the six principal components of the *California Achievement Tests*, the totals for the three subject areas, and for the Total Battery. Since the *California Test of Mental Maturity* Series was used to control age and intelligence for determining grade placements on the CAT, mean grade placement values were correlated with the Intellectual Status Index. The mean I.S.I. of the population tested in Grade 3.1 is 116, indicating that achievement above 3.1 should be expected. (See the discussion of I.S.I., page 39 of this Manual.)

TABLE 9

CORRELATION COEFFICIENTS AND RELATED DATA FOR OTHER STANDARDIZED TESTS VS. TEST 1 READING VOCABULARY, UPPER PRIMARY

TEST*	GRADE	NO. OF CASES	OTHER TEST		COEFFICIENTS			TEST 1 — READING VOCABULARY	
			Mean	S.D.	r	r†	r‡	Mean	S.D.
Metropolitan Word Meaning (Test 2)	3	132	56.4	21.1	.86	.92	.99	31.5	6.9
Stanford Word Meaning (Test 2)	3	93	15.1	8.5	.81	.83	.95	29.6	7.8

TABLE 10

CORRELATION COEFFICIENTS AND RELATED DATA FOR OTHER STANDARDIZED TESTS VS. TEST 2 READING COMPREHENSION, UPPER PRIMARY

TEST*	GRADE	NO. OF CASES	OTHER TEST		COEFFICIENTS			TEST 2 — READING COMPREHENSION	
			Mean	S.D.	r	r†	r‡	Mean	S.D.
Metropolitan Reading (Test 1)	3	132	37.0	11.1	.81	.80	.87	28.7	10.9
Stanford Paragraph Meaning (Test 1)	3	93	19.1	10.1	.84	.86	.98	26.6	10.7

TABLE 11

CORRELATION COEFFICIENTS AND RELATED DATA FOR OTHER STANDARDIZED TESTS VS. TEST 3 ARITHMETIC REASONING, UPPER PRIMARY

TEST*	GRADE	NO. OF CASES	OTHER TEST		COEFFICIENTS			TEST 3 — ARITHMETIC REASONING	
			Mean	S.D.	r	r†	r‡	Mean	S.D.
Metropolitan Arithmetic Problems (Test 4)	3	132	13.2	2.7	.63	.63	.85	15.6	7.4
Stanford Arithmetic Reasoning (Test 5)	3	93	13.2	6.1	.76	.70	.86	14.9	8.1

TABLE 12

CORRELATION COEFFICIENTS AND RELATED DATA FOR OTHER STANDARDIZED TESTS VS. TEST 4 ARITHMETIC FUNDAMENTALS, UPPER PRIMARY

TEST*	GRADE	NO. OF CASES	OTHER TEST		COEFFICIENTS			TEST 4 — ARITHMETIC FUNDAMENTALS	
			Mean	S.D.	r	r†	r‡	Mean	S.D.
Metropolitan Arithmetic Fundamentals (Test 3)	3	132	39.1	10.9	.59	.45	.49	98.4	32.2
Stanford Arithmetic Computation (Test 6)	3	93	11.6	3.8	.49	.74	.99	90.5	22.4

TABLE 13

CORRELATION COEFFICIENTS AND RELATED DATA FOR ONE STANDARDIZED TEST VS. TEST 5 MECHANICS OF ENGLISH, UPPER PRIMARY

TEST*	GRADE	NO. OF CASES	OTHER TEST		COEFFICIENTS			TEST 5 — MECHANICS OF ENGLISH	
			Mean	S.D.	r	r†	r‡	Mean	S.D.
Stanford Language (Test 4)	3	93	23.3	17.0	.65	.71	.78	28.5	10.5

* *Metropolitan Achievement Tests, Primary 2, Form R,* and *Stanford Achievement Test, Elementary, Form J.*

† Pearson product-moment r corrected for range on the *California Achievement Tests.*

‡ Pearson product-moment r corrected for range on the *California Achievement Tests* and for attenuation on both tests. This would be the relationship between the two tests if both had reliability coefficients of 1.00.

TABLE 14

CORRELATION COEFFICIENTS AND RELATED DATA FOR OTHER STANDARDIZED TESTS VS. TEST 6 SPELLING, UPPER PRIMARY

TEST*	GRADE	NO. OF CASES	OTHER TEST		COEFFICIENTS			TEST 6 — SPELLING	
			Mean	S.D.	r	r†	r‡	Mean	S.D.
Metropolitan Spelling (Test 5).....	3	132	16.6	5.5	.86	.87	.99	10.7	3.9
Stanford Spelling (Test 3).....	3	93	19.4	9.3	.89	.88	.99	9.0	4.2

* *Metropolitan Achievement Tests, Primary 2, Form R,* and *Stanford Achievement Test, Elementary, Form J.*

† Pearson product-moment r corrected for range on the *California Achievement Tests.*

‡ Pearson product-moment r corrected for range on the *California Achievement Tests* and for attenuation on both tests. This would be the relationship between the two tests if both had reliability coefficients of 1.00.

The California Test Bureau has compiled an extensive bibliography of literature reporting research studies in which the *California Achievement Tests* were used. A copy of the bibliography is available from the California Test Bureau. Many of the studies were Master's and Doctor's theses not easily available; hence, a considerable number of them have been abstracted. In the bibliography are studies indicating concurrent and predictive validity for the *California Achievement Tests* for a number of variables of interest to school personnel. These, too, are available upon request from the California Test Bureau.

The 1963 Re-Norming

There were three principal reasons for developing the 1963 norms for the *California Achievement Tests:*

1. With the 1963 Revision of the *California Test of Mental Maturity* Series, it became necessary to re-norm the *California Achievement Tests* in order to maintain the proper relationship between the intelligence and achievement test results. The revised *California Short-Form Test of Mental Maturity* served as the new standard of performance for controlling the CAT norms. It could not be assumed that an I.Q. of 100 would be the same on the 1963 Revision of the CTMM Series as it was on the 1957 Edition. Therefore, it was necessary to select a new population and to administer both the CAT and CTMM to this sample. This joint administration of intelligence and achievement tests was similar to the dual standardization of the 1957 Edition of these two series. However, since the content of the *California Achievement Tests* remained the same, it was necessary only to develop new norms and to relate them to the 1963 Revision of the CTMM Series. The 1963 Revision of the *California Short-Form Test of Mental Maturity* was scaled to the 1960 Revision of the Stanford-Binet Intelligence Scale, Form L-M.[7] The Stanford-Binet was used as a criterion instrument because it provided a stable and well-established standard of measurement in terms of I.Q. scores.

2. Newly determined age-grade relationships also made it necessary to re-norm the CAT. These new age-grade relationships resulted from two separate studies. In the first, all data received for students who participated in the standardization of the 1963 Revision of the CTMM Series were examined for grade assignment in relation to age. From these data a composite modal distribution was made. In the second independent study, school systems from all parts of the nation were sampled. These represented schools of various sizes, and communities of various sizes, as well as urban and rural areas. The age-grade relationships from this sampling were compared with the data from the first study in order to verify the consistency of the findings. Where differences were found, the relationships were adjusted as necessary.

3. During the time since the 1957 norms were developed, a variety of changes in curriculum have occurred. Differences in emphasis and time of introduction of various basic skills into the course of study have resulted. These changes could substantially influence achievement test performance in any of the basic skills at any point throughout the grade ranges covered by the CAT. In this respect, the CAT re-norming program has led to an up-dating of the norms.

[7] Lewis M. Terman and Maud A. Merrill, *Revised Stanford-Binet Intelligence Scale,* Third Revision (Boston: Houghton Mifflin Company, 1960).

PART 2

Uses and Interpretation

California Achievement Tests

The *California Achievement Tests* are designed to promote the important educational purposes of measurement, evaluation, and diagnosis. The most comprehensive measure yielded by an achievement test is the total battery score. This score is of value as the most reliable indicator of an individual's or a group's total achievement status. Measurement continues through to the smallest unit scores for which reliability and normative data are provided. Diagnosis and evaluation begin with the subject-area scores and proceed through the various subdivisions of the test to the smallest units, namely, the individual items. From an instructional point of view, the greatest values of achievement testing are realized when all scores, subscores, and responses to items are utilized in measurement, evaluation, and diagnosis. This part of the manual is devoted to explaining these uses of the *California Achievement Tests* results.

The uses that are made of test results should be in harmony with the objectives of the local educational program. However, as new uses for test results emerge, educators are urged to examine their testing programs to see if they are deriving the maximum benefit from them. Hence, it is recommended that users of the *California Achievement Tests* consider all applications of the test results discussed here, examine them in terms of their educational objectives, and overlook no possibilities for capitalizing to the fullest upon information obtained from the test results.

DIAGNOSTIC PROFILE

The results of the *California Achievement Tests* are presented in the form of section, test, subject-area, and total battery scores. The interpretation of these data, whether with individuals or groups, is greatly simplified by the organization of the scores into profile form. A sample profile for the *California Achievement Tests, Upper Primary Level,* appears on page 17.

The profile graphically illustrates, in terms of grade placements, the achievement of the pupil in Reading, Arithmetic, and Language. An examination of the profile will reveal subject areas in which the pupil is strong, typical, or weak relative to a chosen criterion. A more refined picture of the pupil's achievement in the three major areas is made possible by the relative grade-placement positions of the raw scores in Reading Vocabulary, Reading Comprehension, Arithmetic Reasoning, Arithmetic Fundamentals, Mechanics of English, and Spelling. An even more detailed analysis may be initiated through the use of the Diagnostic Analysis of Learning Difficulties described on page 21.

The Diagnostic Profile Sheet for the *California Achievement Tests* has been redesigned for use with the 1963 norms. It is easily distinguishable from the one used with the 1957 norms. On the revised form, the profile is drawn on a horizontal rather than a vertical plane. Several other changes have been made to facilitate interpretation of the data. The form now resembles the machine form, known as the Individual Record Sheet; hence, users accustomed to one form can readily adapt to the other.

The Diagnostic Profile Sheet appears on the outside back cover of the booklet and is also available as a separate sheet. In both cases the Diagnostic Analysis of Learning Difficulties is printed on the reverse of the sheet. An adaptation of the battery profile, for use with the separate Reading, Arithmetic, and Language Tests, is included on the back cover of the separate booklets.

PREPARATION OF THE PROFILE

The profile sheet has been devised to allow for charting those data which school personnel find useful in their interpretation of results from the CAT. Each school system should determine which scores and grade placements best meet its particular evaluative purposes. Profiles may then be completed according to local needs. The following directions apply to the separate test profiles as well as to the battery profile.

1. *Record the raw score* for each section in the row of boxes labeled "Raw Score." Then add the section scores and enter the totals. Obtain the total subject-area raw scores by adding the sub-totals. For example, on the Reading Test, enter the raw scores for Test 1 — Sections A and B in the appropriate boxes; on the sample profile, these are 18 and 21. These are added for the total Reading Vocabulary score (39 in the sample). Follow the same steps to find the total for Test 2, Reading Comprehension, then add the scores for Tests 1 and 2 for the Total Reading score (87 in the sample). Record each subtotal and total raw score in the appropriate box. For the Total Battery raw score, add the total scores for the three subject-area tests. On the sample, the Total Battery score is 270; this is recorded in the box immediately above the total possible score of 375. (It will be noted in the sample that there is no score for Test 4 — Section G, Division. This part of

the test is given only when division has been taught, and the score is never included in the total scores.)

2. *Obtain grade-placement equivalents* for each total raw score (test, subject-area, battery) from Table 20, 1963 Grade Placement and Age Norms, on page 42. For each grade placement desired, read down the appropriate column (Reading Vocabulary, Reading Comprehension, Total Reading, etc.) until the pupil's raw score is found. Lay a straightedge under this figure and find the corresponding grade placement in the outer columns of the table. All grade placements are posted in the topmost row of boxes on the profile under the appropriate total score heading. On the sample, the score of 39 on Reading Vocabulary is equivalent to a grade placement of 3.9. The Total Reading grade placement is 4.3. The Total Battery grade placement is obtained in the same manner. On the sample, the Total Battery raw score of 270 is equivalent to a grade placement of 3.8. The second column from the right in Table 20 gives chronological ages in months which are typical for the grade placements in the outside columns. See item 4 below.

3. *Plot raw scores* across the profile chart. Locate the raw score for each section, test, or subject area on the vertical line directly under the raw-score box. Draw a circle around each section score and use a cross in a circle, ⊗, for totals. Using a straightedge, draw lines connecting the section and total scores in each test. Note how this is done on the sample profile. The grade-placement equivalent for each score is found by referring to the scale at either side of the profile. For a more precise determination, see Table 20, 1963 Grade Placement and Age Norms, on page 42.

4. *Record the pupil's actual grade placement* (A.G.P.), Intellectual Status Index (I.S.I.), Grade Chronological Age (G.C.A.), and actual age at the time of testing (C.A.) in the four boxes to the right of the heavy black line which separates these boxes from the test scores. These may all be transferred from a pupil's profile sheet for the *California Test of Mental Maturity* Series.[1]

   a. *Chronological Age* (C.A.) is obtained by subtracting the pupil's birthdate from the date of the test. The C.A. may be expressed in years and months, or in total months. Fractions of a month are disregarded. On the sample, the birthdate of the pupil tested in October of 1962 is August, 1954. Therefore, his C.A. is 8.2 or 98 months.

   b. *Actual Grade Placement* (A.G.P.), which represents the pupil's grade and month in grade at the time of testing, is determined by adding to his grade one-tenth of a grade-placement unit for each month of school completed, as shown in Table 15 below. A fraction of a month should not be counted. Thus, the third-grade pupil in the sample case, who was tested in the second month (October) of a school year that began in September, has an actual grade placement of 3.1. The A.G.P. will be the same for all members of a grade tested on the same date.

TABLE 15

MONTH OF TESTING — GRADE PLACEMENT RELATIONSHIPS*

MONTHS	SEPTEMBER ENTRANCE	FEBRUARY ENTRANCE
September	.0	.5
October	.1	.6
November	.2	.7
December	.3	.8
January	.4	.9
February	.5	.0
March	.6	.1
April	.7	.2
May	.8	.3
June	.9	.4

*In this table, adjustments need to be made for schools that open as early as August or as late as October. If a school has semi-annual promotions, those pupils beginning the second half of the third grade in September would have an A.G.P. of 3.6 at the time of testing in October.

   c. *Grade Chronological Age* (G.C.A.) represents the typical age for a given grade at a particular month of the school year, and is also the same for all pupils of a grade tested on the same date. The G.C.A. is determined by entering Table 19 at the point corresponding to the pupil's actual grade placement. The chronological age paired with each A.G.P. in the table is the G.C.A. expressed in months. On the sample profile, the pupil had an A.G.P. of 3.1; consequently, his G.C.A. is 102 months, four months in advance of his own chronological age of 98 months.

   d. *Intellectual Status Index* (I.S.I.) is determined by the same procedure used to find I.Q.'s except that the Grade Chronological Age, at the time of testing with the CTMM Series, is used as a reference point instead of the pupil's chronological age. The I.S.I. must be obtained from the tables in the corresponding level of the CTMM Manual, 1963 Revision, using the pupil's Grade Chronological Age and total raw score. The appropriate I.Q. norm table is entered at the G.C.A. (the same for all members of the same grade tested at the same time), using the pupil's total raw score as the variable

[1] It must be emphasized that I.Q.'s and I.S.I.'s obtained from the 1963 Revision of the CTMM Series can be used *only* in combination with the 1963 CAT norms. If a student's I.Q. was obtained from the 1957 CTMM Series, Anticipated Achievement values must be determined by using 1957 CAT norms and procedures.

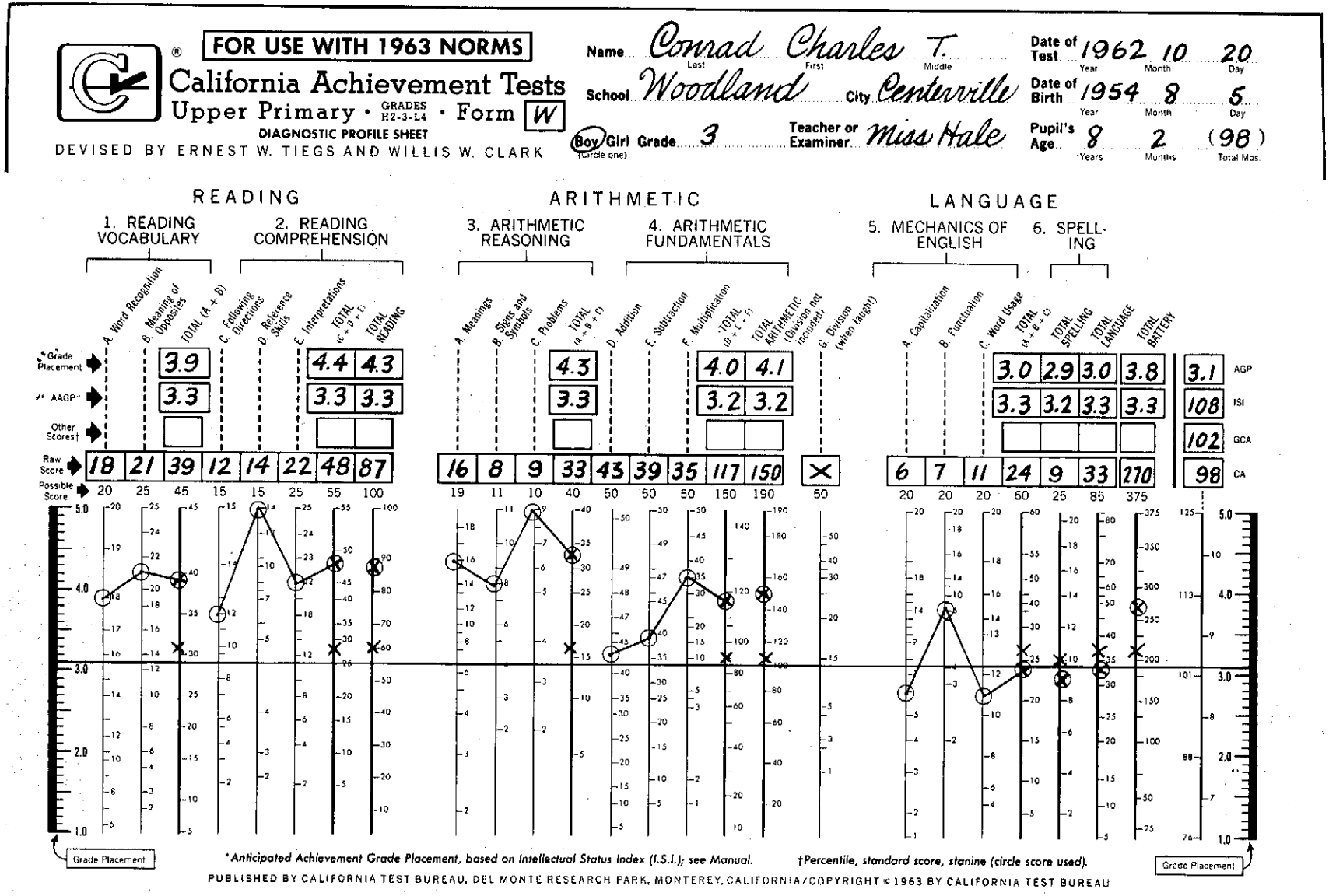

FIG. 1. Sample Diagnostic Profile.

The I.S.I. is the value found at the point in the table at which the G.C.A. and total raw score columns intersect. On the sample profile, the pupil's total raw score on the *Short-Form* (Level 1H) was 56 and his G.C.A. was 102 months (3.1), yielding an I.S.I. of 108. If the CTMM testing was done in a previous school year, see the note at the end of this section for updating the I.S.I.

5. *Draw a horizontal line across the profile sheet* connecting the points at either side for the pupil's actual grade placement. This will permit a ready comparison of each of the scores in relation to actual grade placement. If desired, the pupil's chronological age may be plotted with an "X" on the vertical scale directly below the C.A. box. This scale is calibrated in both years and months. In the sample, the line has been drawn at the pupil's A.G.P. or 3.1. This line cuts the C.A. scale at a point between 101 and 113 months or at the pupil's Grade Chronological Age of 102 months. The distance between the line and the pupil's C.A. on the scale shows a four-month difference between his chronological age of 98 months and the Grade Chronological Age.

6. *Obtain the Anticipated Achievement Grade Placement* for each total score from Tables 26-30, using the pupil's I.S.I. and his actual grade placement at the time of testing. The five double-paged Anticipated Achievement Grade Placement Tables (for Grades 2, 3, and Low 4) each contains the A.A.G.P.'s for half a school year. In the margins of each table are I.S.I.'s from 60 to 140. To obtain A.A.G.P.'s for a pupil, select the appropriate table for the pupil's actual grade placement at the time of testing. Enter the table at the pupil's I.S.I. and lay a straightedge under the corresponding row of grade placements. Record the A.A.G.P.'s in the second row of boxes on the profile beneath each total grade placement. In the sample, an A.A.G.P. of 3.3 is obtained for Reading Vocabulary, 3.3 for Reading Comprehension, 3.3 for Total Reading, etc.

7. *Plot A.A.G.P.'s on the profile*, if desired, to show how the pupil's obtained scores differ from the performance that might be anticipated on the basis of his mental ability. Make an "X" on the heavy vertical line beneath each total score at the point that corresponds to the A.A.G.P. Note how this is done on the sample.

8. *Obtain percentiles, standard scores, or stanines*, if desired, from Tables 21-25. Each of these tables represents the high and low half of each grade within the grade range for a given level of the test.[2] Enter the appropriate table with the pupil's raw score for the sub-totals and total for each subject area, and for the Total Battery. Using a straightedge, find the percentile, standard score, or stanine corresponding to each score. At the bottom of the profile sheet, indicate which of these scores is to be posted by circling "percentile," "standard score," or "stanine." Enter the selected scores in the row of boxes labeled "Other Scores."

NOTE: If the *California Test of Mental Maturity (Long-Form* or *Short-Form)* has been administered during a school year previous to that in which the CAT is given, the I.S.I. must be updated in order to determine precise Anticipated Achievement Grade Placements. As noted above, it is necessary to have the pupil's total raw score (or I.Q.) from the CTMM testing, as well as his own chronological age and his Grade Chronological Age. The G.C.A. changes as the pupil progresses through school; therefore, as his C.A. increases, a higher raw score is required to yield the same I.Q. It is assumed that the I.Q. remains relatively stable. At the time of the CAT testing, updating the I.S.I. necessitates finding the CTMM total raw score that yields the same I.Q. obtained on the earlier CTMM testing. The I.S.I. must reflect the pupil's grade placement at the time of the CAT testing in order to obtain the appropriate A.A.G.P.'s.

In the following steps for updating the I.S.I., the figures given in parentheses refer to the sample case used in both the CTMM and CAT manuals. These profiles show the data from concurrent testing in October of 1962. The process of updating this pupil's I.S.I. in order to secure A.A.G.P.'s for an October 1963 CAT testing is outlined below.

1. Obtain the pupil's C.A. in months for the CAT testing for which Anticipated Achievement is desired. (110 months, October 1963)

2. Using the pupil's C.A. and I.Q. from the earlier CTMM testing, find the total raw score for the I.Q. at the increased C.A. This is done by entering the CTMM I.Q. tables at the pupil's current age (110 months) and following down to the I.Q. obtained in the previous testing (110). The total raw score (65) listed at the side of the table is the figure needed to update the I.S.I.

3. Obtain the G.C.A. equivalent to the pupil's A.G.P. at the time of the CAT testing for which Anticipated Achievement is desired (114 months, October, 1963—one year after the testing which is profiled in this manual).

   If the pupil's current C.A. and his current G.C.A. occur in the same table, it is possible to read directly across the row in which the I.Q. was found to obtain his I.S.I.

4. Re-enter the appropriate I.Q. table in the CTMM manual with the updated total raw score (65) and read across to the point of intersection with the column headed by the pupil's *current* G.C.A. (114 months = Grade 4.1). The value at this intersection (107) is the updated I.S.I. This I.S.I. may then be used to enter the 1963 CAT norm tables to find current Anticipated Achievement Grade Placements.

[2] A table is included for L2 although the recommended range is from H2 to L4.

INTERPRETATION OF THE PROFILE

The CAT profile sheet portrays the performance of an individual in the three basic subject areas and their component parts in terms of certain reference standards—actual, obtained, and Anticipated Achievement Grade Placements, and other derived scores (percentiles, standard scores, and stanines). Determination of whether a pupil is achieving satisfactorily in school depends upon the reference standard applied. He may be achieving at his actual grade placement or above, and still not be performing up to expectancy in relation to his mental ability. The reverse may also be true: A pupil may be achieving below actual grade placement and yet be doing well in terms of his mental ability. The same applies to entire schools or school systems. For instance, a school system whose pupils have a mean I.Q. of 115 and a mean achievement at or slightly above grade placement may have greater cause for concern than a system whose pupils have a mean I.Q. of 93 and a mean achievement somewhat below actual grade placement. If ability and achievement within a school system are either exceptionally high or low, the norms for "typical" populations are not appropriate standards to use in evaluating test results without making necessary adjustments. In such districts, it may be advisable for school personnel to set up local expectancies in terms of percentiles, standard scores, or stanines derived from their own testing.

To obtain the most realistic picture of an individual pupil's achievement, different reference standards must be applied as a basis for interpretation. The profile provides a means of comparing the pupil's performance with (1) the typical performance of others who are at the same actual grade placement (A.G.P.), (2) those who obtain the same raw scores (grade placements), and (3) those of a precisely-defined grade, age, and ability group (A.A.G.P.). Raw scores may also be converted to percentiles, standard scores, or stanines, if desired. These derived scores can be readily compared with the scores of other pupils as well as with the individual's own performance on the various parts of the test. The profile thus may be used for either inter- or intra-individual comparisons. The following interpretation of the sample profile will assist in making the fullest use of all scores.

The pupils chosen for the sample CAT profiles are the same ones whose scores are profiled in the CTMM Manual for the corresponding level. This was done to exemplify the joint use of the two tests. As the norms for the two batteries were established on results from the same population, there is a valid basis for establishing expectancies in the form of Anticipated Achievement Grade Placements.

The horizontal line drawn across the profile sheet connecting the grade placement scale on either side represents the pupil's actual grade placement (3.1). That line cuts through the chronological age scale at the age typical for pupils in Grade 3.1 or 102 months. It is important in interpreting a profile to note the extent to which the age of a pupil deviates from the Grade Chronological Age, since grade-placement norms reflect age in relation to actual grade placement as well as to mental ability. This is basic to an understanding of the Anticipated Achievement concept.

In the sample profile, the grade placements obtained by the pupil in the Reading and Arithmetic Tests are well above the line which indicates his actual grade placement. His grade placement (3.0) in the Language Test, however, falls one month below his A.G.P. Scores which lie above the actual grade placement reference line are interpreted to mean that the pupil's performance on those test units is better than the average performance of the norm group at the same actual grade placement. Scores below the reference line receive the opposite interpretation. Scores that fall on or near the reference line may be considered typical for pupils of that grade assignment.

The limits within which scores must fall to be considered "typical" will vary according to the purposes of the user and the characteristics of the pupil population. These limits are commonly determined by the standard error of measurement of the test (see page 8). Thus, a grade placement of 3.1 for Total Reading Vocabulary, with a standard error of measurement of .2 grade-placement units, may fluctuate two units either way—up to 3.3 or down to 2.9. Variation within this range for an individual is interpreted as being within normal expectation because the "true" score lies at some point within this range.

Limits for typical scores should be established at the local level by the personnel responsible for interpreting test results. When an individual's scores depart markedly from these limits, three factors should be investigated: (1) placement of curriculum content at specific grade levels, either higher or lower than usual; (2) the chronological age of the pupil; and (3) his mental maturity. Individuals or groups older than average for their actual grade placement are generally more mature and have been exposed to more learning opportunities than typical pupils at the same grade level. Thus, when other factors are held constant, it is expected that older individuals and groups will perform better on achievement tests than will pupils who are at age and grade. Pupils with higher-than-average mental ability for their actual grade placement can also be expected to do better than average on achievement tests.

The concept of Anticipated Achievement was developed to provide realistic expectancies for an individual pupil by accounting for his mental maturity as measured on the CTMM Series, his chronological age, and his actual school experience (see pages 38-40). The pupil in the sample profile has an I.S.I. of 108. Using 100 as a point of reference—the same as with the I.Q.—this means that the Anticipated Achievement Grade Placement for a pupil of his age, I.Q., and grade would be above norm. Likewise, a pupil with an I.S.I. of 94 would have an A.A.G.P. below actual grade placement.

Examination of the sample profile shows that the pupil has an actual grade placement of 3.1 and a Total Battery Grade Placement of 3.8. Using

Diagnostic Analysis of Learning Difficulties*

California Achievement Tests—Upper Primary Battery

1. Reading Vocabulary

A. WORD RECOGNITION

- 1, 12 — Gross differences
- 2, 3, 6, 7, 8, 9, 10, 13, 15, 16, 17, 18 — Final sounds
- 4, 5, 14, 19, 20 — Middle sounds
- 11 — Initial sounds

B. MEANING OF OPPOSITES

- 1-25 — Basic vocabulary

2. Comprehension

C. FOLLOWING DIRECTIONS

- 1, 2, 3, 6, 10, 11 — Simple directions
- 4, 5, 7, 8, 9, 12, 13, 14, 15 — Directions requiring choice

D. REFERENCE SKILLS

- 1, 2 — Parts of book
- 3, 4 — Use of dictionary
- 5, 6, 7, 8 — Alphabetizing
- 9, 10, 11 — Table of contents
- 12, 13 — Use of index
- 14, 15 — Reading a graph

E. INTERPRETATION OF MATERIAL

- 1, 8, 11 — Topic or central idea
- 2, 3, 4, 12, 13, 14, 16 — Directly stated facts
- 5, 6, 7, 9, 10, 15, 17, 18, 19, 20, 21, 22 — Inferences
- 23, 24, 25 — Sequence of events

TEST OF WORD FORM

- 1, 5, 9 — Identical words, lower case
- 2, 3, 8, 10 — Different words, lower case
- 11, 13 — Identical words, script
- 12, 14, 21, 24 — Diff. words, script
- 16, 22 — Identical words, capitals
- 15, 17 — Different words, capitals
- 18, 20, 25 — Identical words, mixed forms
- 19, 23 — Different words, mixed forms
- 4, 6, 7 — Reversed words

3. Arithmetic Reasoning

A. MEANINGS

- 1, 2 — Sequence of numbers
- 3 — Writing numbers
- 4, 5, 6 — Value of coins
- 7, 8, 9 — Writing money
- 10, 11 — Vocabulary
- 12, 13 — Telling time
- 14, 15, 16 — Comparison of numbers
- 17, 18, 19 — Roman numerals

B. SIGNS AND SYMBOLS

- 1-6 — Meaning and use of signs
- 7-11 — Abbreviations

C. PROBLEMS

- 1, 2, 4 — One-step problems
- 3, 5, 6, 7, 8, 9, 10 — Two-step problems
- 6, 7 — Sharing and averaging
- 8, 9, 10 — Budgeting

4. Arithmetic Fundamentals

D. ADDITION

- 1-45 — Number facts
- 2, 4, 9, 12, 17, 19, 20, 25, 46 — Adding zeros
- 46, 47 — Two-place simple addition
- 48, 49, 50 — Carrying

E. SUBTRACTION

- 1-45 — Number facts
- 2, 8, 12 — Subtracting zeros
- 46, 49 — Two- and three-place simple subtraction
- 44, 45, 47, 48, 50 — Borrowing

F. MULTIPLICATION

- 1-45 — Number facts
- 6, 21, 24, 27, 30, 33, 34, 36 — Multiplying zeros
- 46, 47, 48 — Two- and three-place simple multiplication
- 49, 50 — Carrying

G. DIVISION

- 1-45 — Number facts
- 4, 6, 14, 26, 35 — Dividing zeros
- 46 — Two-place simple division
- 47, 48, 49, 50 — Carrying

5. Mechanics of English

A. CAPITALIZATION

- 1, 5 — Pronoun "I"
- 2, 7, 16 — Names of persons
- 3, 4, 8 — Names of months or days
- 6, 9, 10, 12, 13 — Names of places
- 14, 19 — First words of quotations
- 11, 15, 17, 18, 20 — First words of sentences

B. PUNCTUATION

- 1, 6, 10, 11, 13, 14, 16, 17 — Periods
- 2, 3, 5, 7, 19 — Question marks
- 4, 8, 9, 12, 15, 18, 20 — Commas

C. WORD USAGE

- 1, 7 — Case
- 2, 11, 14, 16, 18 — Tense
- 3, 4, 9, 17 — Number
- 5, 6, 8, 10, 12, 13, 15, 19, 20 — Good usage

6. Spelling (1-25). See profile

* Consult Part 2 of the Manual for uses.

FIG. 2. Sample Diagnostic Analysis of Learning Difficulties.

the I.S.I. derived from the CTMM, SF, an Anticipated Achievement Grade Placement of 3.3 for the Total Battery was assigned as a reasonable expectancy for a pupil of his age and mental ability in the low third grade. His total achievement on the CAT battery (3.8) is seven months above his actual grade placement (3.1) and five months above his Anticipated Achievement Grade Placement (3.3). These grade placements and age factors are all essential to the proper interpretation of the pupil's scores.

In the three subject areas of Reading, Arithmetic, and Language, the pupil obtained grade placements of 4.3, 4.1, and 3.0, respectively. It is apparent that his achievement in Reading and Arithmetic exceeds expectation in view of his actual grade placement, and also the achievement that would be anticipated for this pupil. In Total Reading, his performance is one year and two months above the achievement typical for his A.G.P. (3.1), and a full year above his A.A.G.P. (3.3). In the Arithmetic Test, he demonstrates similar achievement, obtaining a grade placement one full year above his A.G.P. and nine months above his A.A.G.P. His Language Test scores, however, place him slightly below his actual grade placement in Mechanics of English, Spelling, and Total Language.

The profile thus shows that this pupil achieves well beyond expectancy in Reading and Arithmetic and slightly below expectancy in Language. Although his Total Battery Grade Placement is seven months above his A.G.P. and five months above his A.A.G.P., there are several aspects of his achievement which should be studied. (See below.)

INDIVIDUAL DIAGNOSTIC ANALYSIS

Effective classroom diagnosis is characterized by a continuing search for keys to learning difficulties. Most classroom diagnostic work is informal and involves no standardized tests. Teachers take their clues from pupils' verbal and written work. Naturally, they also capitalize on what the pupils do or fail to do on standardized achievement tests. The *California Achievement Tests* aid in making this search more productive. The examination of the scores of the six tests, as described in the above section on Interpretation of the Profile, is the first step in the identification of pupil weaknesses. It is suggested, however, that the search continue to the finer elements of the tests.

To facilitate detailed analysis, the items of the *California Achievement Tests* are grouped into sections. For example, the Reading Comprehension Test is subdivided into three sections: (1) Following Directions, (2) Reference Skills, and (3) Interpretations. The number of items in each of the fifteen sections of the Upper Primary Level is relatively small, ranging from ten to fifty. The reliability of individual sections does not justify attaching specific grade placement values to the section scores. The section scores are most helpful, however, in identifying areas which the teacher can explore for pupil weaknesses. The correct use of the section profile is to identify areas in which the teacher should proceed with the Diagnostic Analysis of Learning Difficulties described in this section.

Turning again to the sample profile, the Anticipated Achievement Grade Placement for the Total Battery is two months higher than the actual grade placement. It is necessary to study the pupil's profile for strengths and weaknesses in terms of two criteria: the "typical" achievement of pupils at Grade 3.1—indicated by the line drawn across the profile—and the Anticipated Achievement Grade Placements assigned for this pupil with an I.S.I. of 108 which are plotted with an "X" on each line for total scores. Weak areas lie in the Language Test, in both Mechanics of English and Spelling, since the pupil who is expected to achieve at 3.3 and 3.2 actually achieved at 3.0 and 2.9. Scores which indicate a need for study of this pupil's performance are found in the following sections: Test 5—Section A, Capitalization and Section C, Word Usage; and Test 6, Spelling. His skills in Addition and Subtraction should also be checked in view of his ability.

DIAGNOSTIC ANALYSIS OF LEARNING DIFFICULTIES

The next step in the diagnostic process is a study of the Diagnostic Analysis of Learning Difficulties. As shown by the sample on page 20, the arrangement of the form corresponds to the order of the tests and sections found in the profile. Thus, the numbers and letters correspond to the tests and sections, respectively. Under each section are the names of the various categories or functional elements. The numbers of the test items which cover each of the categories are listed and bracketed with the names of these elements.

Individual responses to various test items should be examined in those sections where low scores reveal achievement below expectancy. The functional elements with which the pupil is having difficulty in each of the sections should be determined and checked on the Diagnostic Analysis of Learning Difficulties. Wrong responses to items 2, 7, and 16 in Test 5—Section A, for example, may indicate a deficiency in capitalization of names of persons; wrong responses to items 2, 11, 14, 16, and 18 in Test 5—Section C may indicate that the pupil lacks ability to use tense correctly.

Since the *California Achievement Tests, Upper Primary Level,* are designed to measure achievement over a two-year span, there will be items in the test that sample skills for which mastery is not normally expected of third-grade pupils. This is true to a greater degree of second-grade pupils. Thus, teachers should examine the Diagnostic Analysis of Learning Difficulties in advance to determine the categories for which achievement approaching mastery is to be expected. Under ordinary testing conditions, an

omitted item should be interpreted to mean that the pupil did not know the answer. An analysis of omissions will no doubt reveal that the majority occur in categories that test elements that have not yet been introduced in the course of study.

Any deficiencies indicated by the Diagnostic Analysis of Learning Difficulties should be individually verified by the teacher or counselor. It then may be determined to what extent the pupil requires remedial work in specific skills or areas of learning. The purpose of the Diagnostic Analysis is to identify for further study those particular areas in which deficiencies in pupil performance may exist. In no case should this rough screening be interpreted as the sole or final indicator of a pupil's strengths or weaknesses, since the small numbers of items in some categories do not provide sufficiently high reliabilities.

One measure of reliability is shown in the following table, which presents the chances against a pupil's obtaining all correct responses by guessing. Because many of the test items provide multiple choices, chances are increased that any difficulty with functional elements will show up in the Diagnostic Analysis.

TABLE 16

CHANCES AGAINST GUESSING CORRECT RESPONSES

NUMBER OF TEST ITEMS PER DIAGNOSTIC CATEGORY	NUMBER OF CHOICES PER TEST ITEM			
	2	3	4	5
2	4:1	9:1	16:1	25:1
3	8:1	27:1	64:1	125:1
4	16:1	81:1	256:1	625:1
5	32:1	243:1	1024:1	3125:1

Properly used and interpreted, the Diagnostic Analysis is therefore a valuable source of clues to areas in which a pupil's performance should be more thoroughly investigated. See the following section on Further Diagnostic and Remedial Materials.

Note on the sample Diagnostic Analysis form that a blank space is provided in front of each of the categories. These spaces may be used by the teacher to check areas in which the pupil is deficient, or to enter textbook pages or assignments in which these elements are discussed. It will be helpful if the specific items missed or omitted in problem areas are underlined or circled. As the pupil masters particular items or areas, these items may be checked off the form.

The complete Diagnostic Analysis appears on the reverse of the separate profile sheet and on the inside back cover of the battery test booklet. The portions of the form that apply to each of the subject-area tests are printed beside the partial profile on the back cover of the Reading, Arithmetic, and Language Test booklets.

Use the Diagnostic Analysis form printed in the test booklet to check the items missed by the pupil in each test and category. This is best done at the time the booklets are being scored with the hand-scoring key. Completion and checking of the Diagnostic Analysis will be simplified if the sheet is detached and kept in the teacher's class file or the pupil's cumulative folder.

SPECIAL USE OF TEST 4 — SECTION G, DIVISION

Division scores in the Upper Primary level are profiled separately and are used for diagnosis only. Normative data for Test 4, Arithmetic Fundamentals, exclude Division. The total score in Arithmetic Fundamentals accurately reflects achievement without the inclusion of Division. If a test of division is desired as part of the total arithmetic score, the Elementary Arithmetic Test should be administered.

FURTHER DIAGNOSTIC AND REMEDIAL MATERIALS

Diagnostic analysis and interpretation of test results on the profile identify curriculum areas in which class and individual pupil performance shows weaknesses. Before proceeding with remedial work, the teacher needs to determine the categories and functional elements in which achievement may be expected to approach mastery in terms of the course of study, and to rule out those categories which are to be taught in subsequent grades. In some of the basic skills and functional elements, further diagnosis will be indicated in order to obtain more conclusive evidence of the need for remedial work. The next step involves curricular readjustments to teach those aspects of the basic skills identified by the above processes; these readjustments may relate to entire classes or groups, or to individual pupils as indicated by educational diagnosis. In the following paragraphs are suggested materials which will assist school personnel in such further diagnostic and remedial work.

For a general discussion of the broader aspects of evaluation pertaining to individual and group educational diagnosis, teachers and administrators are referred to the publication of Adams and Torgerson.[3] Although the procedures described are somewhat different, the theoretical basis for identifying needs and for strengthening skills of individuals and groups is in harmony with the preceding section.

The *Diagnostic Tests and Self-Helps in Arithmetic* by Dr. Leo Brueckner[4] are closely integrated with the *California Arithmetic Test* and provide the basis for a precisely-directed improvement program following a CAT testing. General areas of weakness are revealed by four *Screening Tests* which in turn are linked to twenty-three analytical *Diagnostic Tests* designed to identify specific pupil deficiencies in the areas indicated. The *Diagnostic Tests* make it possible to determine the point at which any of a pupil's major computational skills break down. Finally, twenty-three *Self-Helps* and corrective exercises provide a systematic basis for re-teaching and remedial work in each of the

[3] Theodore L. Torgerson and Georgia Sachs Adams, *Measurement and Evaluation for the Elementary-School Teacher* (New York: The Dryden Press, 1954).

[4] Leo J. Brueckner, *Diagnostic Tests and Self-Helps in Arithmetic* (Monterey: California Test Bureau, 1955).

specific arithmetical skills in which the *Diagnostic Tests* have shown that the pupil has difficulty.

The analysis of reading difficulties indicated by the *California Reading Test* will be refined and reinforced through use of the *Diagnostic Reading Scales* developed by Dr. George D. Spache.[5] The *Scales* are individually-administered exercises designed to evaluate basic reading skills and to identify specific deficiencies that prevent pupils from reading satisfactorily. The reading materials are graduated from Grades 1 through 8, and are appropriate for both normal and retarded readers at the elementary level and for retarded readers at the junior and senior high school levels. The test battery comprises three word-recognition lists, twenty-two reading passages, and six supplementary phonics tests. The graded word-recognition lists are used to determine a tentative level of performance and an appropriate point for entering the reading passages. These passages yield three reading levels for each pupil: the Instructional Level (oral reading), the Independent Level (silent reading), and the Potential Level (auditory comprehension). The *Scales* are a valuable extension of the informal reading inventories used by many teachers, with the added advantages of validation and standardization.

A number of bulletins and technical reports concerned with the use and interpretation of tests, identification of learning difficulties, and other aspects of educational diagnosis are available upon request from the California Test Bureau.

ANALYSIS AND USE OF GROUP DATA

In many situations, the teacher will find it valuable to use the test scores of the entire class for the purpose of analyzing group deficiencies and taking necessary remedial action. The *California Achievement Tests* provide a comprehensive picture of areas of class difficulty in the fundamental skills measured by the tests. The following discussion outlines the manner in which the analysis may be made.

Each package of *California Achievement Tests* booklets contains a Class Record Sheet. Instructions for entering data are included on the sheet. At the bottom of the Class Record Sheet is a summary of class data with space for entering the number of pupils achieving each grade placement (as shown by the test scores and norms for the Reading, Arithmetic, and Language Tests). Space is also provided for showing the number of pupils who have attained each percentile rank on each test.

If the summary of class data on the Class Record Sheet indicates that the class as a whole is measuring up to expected achievement in fundamental skills, remedial action will be directed primarily toward individual pupils. However, in those areas in which the class is shown to be below desired achievement, further analysis may be helpful. Class grade placements in each test section may be reviewed. When the median grade placement of the class falls below an expected level for a particular section or sections, a diagnostic analysis may be made in a manner similar to that for an individual analysis.

A complete Diagnostic Analysis of Learning Difficulties is printed on the back of each Class Record Sheet for making either a partial or a complete diagnosis. The class Diagnostic Analysis form is used to summarize the data recorded on the individual forms. On the back of the Class Record Sheet, after each pupil's name, the teacher checks the functional elements which have been identified by item numbers on the individual Diagnostic Analysis of Learning Difficulties.

The individual achievement test data, the summary of class data, and the diagnostic analysis will provide the teacher with a wide range of information on which to base instructional planning. Uses of these data contribute to (1) grouping of pupils according to their mastery of basic skills for educational activities; (2) assignment of appropriate activities to meet the specific needs of individuals, groups, or a total class; and (3) educational guidance of pupils who demonstrate a generalized learning problem.

A master grade summary may be prepared by combining the percentile or grade-placement data from each class summary into grade summaries in a single school or school system. The California Test Bureau publishes a report form called Summary of Survey Data for making master grade summaries for school systems. This may be used to provide administrators and supervisors with an overview of the range of achievement of each grade in the fundamental skills measured by the tests. Grade or school medians or averages in the fundamental skills may be determined from the master grade summary for many administrative purposes.

Standardized testing programs are administered for one principal purpose: to improve instruction and learning. To this end, it is essential in all uses and interpretations of test results that school personnel be aware of the mental or physical handicaps, the social and emotional problems, or the language difficulties which may limit individual performance and achievement. The potential values of a standardized testing program will be realized to the extent that interpretation of profiles, educational diagnosis, and follow-up remedial programs are performed within the context of case history data and the teacher's observations of individual pupils in the classroom.

[5] George D. Spache, *Diagnostic Reading Scales* (Monterey: California Test Bureau, 1963).

PART 3

Directions for Administration

California Achievement Tests

GENERAL INSTRUCTIONS TO THE EXAMINER

The *California Achievement Tests* yield standardized and diagnostic data for three areas of basic skills. They may be administered as a complete battery; as separate Reading, Arithmetic, or Language Tests; or as individual sections of these tests. Familiarization with the general instructions that follow and adherence to procedures are essential for obtaining accurate and meaningful results.

TIME LIMITS

Each of the test sections has a time limit which must not be exceeded. The established time limits allow most pupils to try all of the items, or to complete enough items to reveal the extent of their skill mastery. Therefore, though strict time limits are imposed, the *California Achievement Tests* are primarily power rather than speed tests. [1,2]

When a pupil finishes a section before time is called, he must not be allowed to go back to previous sections. However, if all pupils complete a test section in less than the specified time, the examiner should proceed with the next section.

It should be remembered that the time limits include only actual working time. Thus, timing should not start on any test section until the pupils are actually told to begin.

The total working time for the battery is 2 hours and 4 minutes. The instructions for marking answers, reading the printed instructions, and marking sample items will require additional time. Time must also be allowed for answering procedural questions, filling in identifying data, and distributing and collecting materials.

[1] Lee J. Cronbach, *Essentials of Psychological Testing*, Second Edition (New York: Harper and Brothers, 1960), pp. 222-223.

[2] Anne Anastasi, *Psychological Testing*, Second Edition (New York: The Macmillan Company, 1961), pp. 38-39.

CAUTION AGAINST COACHING

It is important that pupils understand clearly the manner in which they are to mark their responses. However, the examiner should remember that this is a test and not a learning activity; therefore, the correct response should in no way be indicated for any items except the samples.

REST PERIODS

It is permissible to have a break or rest period after any section of the *California Achievement Tests* battery or between the separate tests. These may be recesses, lunch periods, or regular class activities. At the conclusion of each of the three subject tests (Reading, Arithmetic, or Language), booklets are collected, constituting a natural break in the test administration. At this level, it is recommended that only one of the subject-area tests be administered at any one sitting.

CHOOSING CORRECT DIRECTIONS

This manual is used for Battery as well as separate test administrations. Alternate directions for starting a test are presented in two boxes. Test battery administration parts are given first, followed by the separate test parts. It is important that the examiner read through those parts of the instructions for administration which he is going to use *before* beginning any testing.

Instructions for administering the tests start on the following pages, whether given separately or as a battery:

Reading Test

TIME ALLOTMENT (Testing time only):

Test 1. Reading Vocabulary	9 minutes
Section A	4 minutes
Section B	5 minutes
Test 2. Reading Comprehension	31 minutes
Section C	6 minutes
Section D	10 minutes
Section E	15 minutes
Total time	40 minutes

MATERIALS REQUIRED:

For each pupil—

1 test booklet—*California Achievement Tests, Upper Primary Battery* or the *California Reading Test, Upper Primary* (Form W or X)

1 ordinary lead pencil with eraser attached

1 eraser (if not attached to pencil)

In addition, for the examiner—

extra pencils

extra erasers

extra copy of test booklet (for demonstration purposes)

stop watch, or watch or wall clock with second hand

First prepare on the chalkboard a model of the part on the back cover of the booklet in which identifying data are to be written. Complete the name of school, grade, teacher or examiner, date of test, and city as they apply to your group. Note the space set off by parentheses in the middle of the third line for identifying data. This space is provided for teachers or examiners who wish pupils to indicate their section, class, room number, etc., in order to facilitate the handling of data and test booklets after tests have been scored.

After checking to see that all pupils have pencils and erasers, distribute the test booklets, face-up.

From this point on, certain parts of these directions are printed in **this different type face** and preceded by SAY:. These parts are to be read to pupils.

Alternate directions for starting a test are presented in the two boxes following this paragraph. Test Battery administration directions are given first, followed by separate Reading Test directions. Only one of the two is, therefore, to be read to pupils. Follow the directions in the appropriate box.

If administering the Battery booklet,

SAY: **Look at the bottom of the booklet. It says: "To Boys and Girls: This booklet has some games you will like. In taking the first part, you will show how many words you know and how well you can read. Do as many of them as you can. Do not turn this page until told to do so." No one is expected to finish all of the parts nor to do everything correctly. You may do very well even if you do not finish everything. If you do not know an answer, go on to the next question. You may come back to it later if you have time.**

If administering the separate Reading booklet,

SAY: **Look at the bottom of the booklet. It says: "To Boys and Girls: This booklet has some games you will like. They will show how many words you know and how well you can read. Do as many of them as you can. Do not turn this page until told to do so." No one is expected to finish all of the parts nor to do everything correctly. You may do very well even if you do not finish everything. If you do not know an answer, go on to the next question. You may come back to it later if you have time.**

SAY: **If your pencil breaks or will not write, hold it up and I will give you another. Now turn the booklet over. Notice in the light space in the upper right-hand corner that there are lines for your name, grade, age, and so on. Copy the information from the model on the chalkboard and fill in your own name, age—in years only, and date of birth. Also circle either "Boy" or "Girl" in the corner.**

Give pupils time to record these data. Check to see that information is properly entered.

SAY: **When you have finished, turn your booklet back to the front page and wait for further instructions.**

When all pupils have finished,

SAY: **Now open the booklet to the next page that has a big 1 near the top and fold it back so that the 1 shows.**

Demonstrate and be sure that all pupils have their booklets folded back to Test 1—Section A.

TEST 1—SECTION A

Time required, about 4 minutes

SAY: **This game will show how well you can recognize a word when I say it. Read the directions silently while I read them aloud. They are: "Look at the boxes below. I shall read one word in each box. You are to draw a line under it." Look at the box under Sample 1.** (Demonstrate.) **Find the word, have. A line has been drawn under it.** (Pause.) **In the box**

under Sample B, find the word, ball. It has a line drawn under it. You are to mark your answers in the same way.

Be sure that pupils understand how they are to mark their answers.

SAY: **I am now going to read one of the words in each box, and you are to draw a line under it before going on to the next box. Ready now for word No. 1.** (Pronounce test word No. 1.) **Draw a line under it.** (Allow 5 seconds.) **Now look at No. 2.** (Pronounce the word.) **Draw a line under it.** (Allow 5 seconds.)

Follow this same procedure for each box, using words from the appropriate form of the test listed below.

	FORM W	FORM X
1.	dog	man
2.	then	this
3.	goat	road
4.	ride	bide
5.	horse	grass
6.	gnarl	heir
7.	depart	behind
8.	straw	coast
9.	sing	form
10.	purchase	permit
11.	bike	cake
12.	string	sample
13.	protect	contend
14.	foul	load
15.	breathe	country
16.	trail	forth
17.	produce	produce
18.	soldier	shoulder
19.	through	bought
20.	posture	musical

After the twentieth word has been pronounced and pupils have finished,

SAY: **Now turn the page and fold it back to the page with the big 2 near the top.**

TEST 1 — SECTION B

Time limit, 5 minutes

SAY: **This game will show how well you can recognize words with opposite meanings. Read the directions silently while I read them aloud. They are: "Look at the boxes below. See the words with numbers in front of them. You are to draw a line from each of these words to the word on the other side which means the opposite." Look at the box below the directions. The first word in the box after Sample C is black.** (Demonstrate.) **Look at the four words on the other side. Which word means the opposite of black?** (Pause.) **That's right, white. Therefore, a line has been drawn from the word, black, to the word, white. Now look at the word after Sample D, little. What word on the other side means the opposite of little?** (Pause.) **Yes, big. Therefore, a line has been drawn from the word, little, to the word, big.**

Be sure that pupils understand the directions and how to indicate their marks. Illustrate on the blackboard, if necessary.

SAY: **Now do all the others that you can on this page, beginning with number 1.**

After 5 minutes,

SAY: **Now stop working and turn the booklet over so that you see the page with the big 3 near the top.**

TEST 2 — SECTION C

Time limit, 6 minutes

SAY: **This game will show how well you can do what you are told to do. Read the directions silently while I read them aloud. They are: "Read each sentence below and do what it says." Now look at Sample E under the directions. It says: "Draw a line under this word: run." A line has been drawn under the word, run, to show you how to do what the words tell you to do.**

Be sure that pupils understand how to mark their answers before proceeding.

SAY: **Now do all the others that you can on this and the next page, beginning with number 1. When you have finished this page, turn the page over and go right on working. You may begin.**

After 6 minutes,

SAY: **Now stop working and turn the booklet over so that you see the page with the big 4 near the top.**

TEST 2 — SECTION D

Time limit, 10 minutes

SAY: **This game will show how well you can find things you need for your school work. Read the directions silently while I read them aloud. They are: "Read the following questions and problems. Draw a line under each correct answer." There are three answers under each question. You are to choose the one of the three which you think is the right answer and draw a line under it.**

Be sure that pupils understand the directions and how to indicate their marks.

SAY: **Now do as many as you can on this and the following two pages, beginning with number 1. When you have finished this page, turn the page and go right on working. When you have finished question 13, turn the booklet over and do questions 14 and 15.** (Demonstrate if necessary.) **You may begin.**

After 10 minutes,

SAY: **Now stop working. Turn the page and fold it back so that you see the page with the big 5 near the top.**

TEST 2 — SECTION E

Time limit, 15 minutes

SAY: **This game will show how well you can answer questions about stories which you read. Read the directions silently while I read them aloud. They are: "Read each of the stories. Do what it says under each story." It will say that you are to draw lines under the words that show the correct answers.**

Be sure that pupils understand the directions and how to indicate their marks.

SAY: **Now do as many as you can on this and the following two pages, beginning with number 1. When you have finished this page, turn the booklet over and go right on working. When you have finished question 17, turn the page and do questions 18 through 25.** (Demonstrate if necessary.)**You may begin.**

After 15 minutes,

SAY: **Now stop working and put your pencils down.**

If this completes a testing period, collect the booklets. Be sure that you have received all of the booklets. The test of Word Form which follows the completion of the Reading Test has special uses, described on page 6 of this manual. Normally it will not be given as a regular part of the Reading Test administration. However, for ease of location by those who will use this section, the directions are presented here.

When giving this special section, after having completed the necessary preparation,

SAY: **Now turn to the page that says "Word Form" near the top.** (Demonstrate and give help as needed.)

TEST OF WORD FORM

No time limit (About 3-5 minutes required)

SAY: **This game will show how well you can recognize words that are the same and words that are different. Read the directions silently while I read them aloud. They are: "Look at the words below. If two words are the same or mean the same, write S on the line between them. If they mean different things, write D."**

Look at Sample F below the directions. What is the first word in it? Yes, dog. What is the other word in the same line? (Wait for pupils to answer.) **Yes, dog. So an S is written on the dotted line between the words. S means Same. What are the two words in Sample G?** (Pause.) **Yes, boy and girl. What is written between them? Yes, D, because D means Different.**

Ask if everyone understands, and if necessary, repeat on the chalkboard the illustration in the test booklet. Be sure that pupils understand how they are to mark their answers before allowing them to proceed.

SAY: **Now do all the others that you can on this page. Write an S or a D on each dotted line, beginning with Number 1. You may begin.**

Permit all pupils to complete the test.

Arithmetic Test[3]

TIME ALLOTMENT (Testing time only):

Test 3. Arithmetic Reasoning	21 minutes
Section A	7 minutes
Section B	4 minutes
Section C	10 minutes
Test 4. Arithmetic Fundamentals	33 minutes
Section D	6 minutes
Section E	8 minutes
Section F	9 minutes
Section G	10 minutes
Total time	54 minutes

NOTE: It is permissible to have a break or rest period after any test section.

MATERIALS REQUIRED:

For each pupil—
- 1 test booklet—*California Achievement Tests, Upper Primary Battery*, or the *California Arithmetic Test, Upper Primary* (Form W or X)
- 1 ordinary lead pencil with eraser attached
- 1 eraser (if not attached to pencil)
- 1 piece of scratch paper (approximately 8½" x 11")

In addition, for the examiner—
- extra pencils
- extra erasers
- extra copy of test booklet (for demonstration purposes)
- stop watch, or watch or wall clock with second hand

If identifying data on booklets have not already been completed, prepare on the chalkboard a model of the part on the back cover of the booklet in which identifying data are to be written. Complete the name of school, grade, teacher or examiner, and city as they apply to your group. Note the space set off by parentheses in the middle of the second line for identifying data. This space is provided for teachers or examiners who wish pupils to indicate their section, class, room number, etc., in order to facilitate the handling of data and test booklets after tests have been scored. After checking to see that pupils have pencils and erasers, distribute the test booklets, face-up, if pupils do not already have them from the Reading Test administration.

From this point on, certain parts of these directions are printed in **this different type face** and preceded by SAY:. These parts are to be read to pupils.

Alternate directions for starting a test are presented in the two boxes following this paragraph. Test Battery administration directions are given first, followed by separate Arithmetic Test directions. Only one of the two is, therefore, to be read to pupils. Follow the directions in the appropriate box.

If administering the Battery booklet,

SAY: **Open your booklet to page 15 which says, "Arithmetic."** (Help pupils find the place, if necessary.) **Below that, find**

[3] If you are administering the Arithmetic Test only, be sure you have read the General Instructions to the Examiner on page 25 before proceeding.

"To Boys and Girls: The games in this part of the booklet will show how well you can think and work problems. Do as many of them as you can. Do not turn this page until told to do so." No one is expected to finish all of the parts nor to do everything correctly. You may do very well even if you do not finish everything. If you cannot do a problem, go on to the next one. You may come back to it later if you have time. Now turn to the next page which has a big 1 near the top and fold it back so that the 1 shows.

Demonstrate and be sure that pupils have Test 3 — Section A.

If administering the separate Arithmetic booklet,

SAY: **Look at the bottom of your booklet. It says: "To Boys and Girls: This booklet has some games you will like. They will show how well you can think and work problems. Do as many of them as you can. Do not turn this page until told to do so." No one is expected to do all of the parts nor to do everything correctly. You may do very well even if you do not finish everything. If you cannot do a problem, go on to the next one. You may come back to it later if you have time. If your pencil breaks or will not write, hold it up and I will give you another.**

Now turn the booklet over to the back cover-page. Notice in the light space in the upper right-hand corner that there are lines for your name, grade, age, and so on. Copy the information from the model on the chalkboard and fill in your name, age — in years only, and date of birth. Also circle either "Boy" or "Girl" in the corner.

Give pupils time to record these data. Check to see that information is properly entered.

SAY: **When you have finished, turn your booklet back to the front page and wait for further instructions.**

When all pupils have finished,

SAY: **Now open the booklet to the next page which has a big 1 near the top and fold it back so that the 1 shows.**

Demonstrate and be sure that all pupils have their booklets folded back to Test 3 — Section A.

TEST 3 — SECTION A

Time limit, 7 minutes, in 2 parts of 3 and 4 minutes each

SAY: **The directions for this game are at the top of the page. Read them silently while I read them aloud. They are: "Look at the sentences below with spaces in them. Decide what number belongs in each space and write it there."**

Ask the pupils if they understand, and if necessary, put an illustration on the board. Be sure that pupils understand how they are to mark their answers before allowing them to proceed.

SAY: **Now do as many as you can on this page, beginning with number 1. Write your answers on the lined spaces. You may begin.**

Circulate among the pupils to be sure that they are writing their answers in the right places.

After 3 minutes on this part,

SAY: **Now stop working and turn to the page with the big 2 near the top. The directions for this test are at the top of the page. Read them silently while I read them aloud. They are: "Read what it says below and do what it tells you to do." Now do as many as you can on this page. You may begin.**

Be sure that pupils understand what they are to do. Show them where to mark, if necessary, but do not tell them the answers.

After 4 more minutes (7 minutes total working time),

SAY: **Now stop working and turn the page so that you can see the page with the big 3 near the top.**

TEST 3 — SECTION B

Time limit, 4 minutes

SAY: **Read the directions for this game silently while I read them aloud. They are: "Read what it says below. Show your answers by drawing lines under the right words and writing the correct signs in the spaces." Now do as many as you can on this page, beginning with number 1.**

Be sure that pupils understand how to mark their answers. If necessary tell them what to do, but do not tell them the answers.

After 4 minutes,

SAY: **Now stop working and turn to the page with the big 4 near the top.**

TEST 3 — SECTION C

Time limit, 10 minutes

SAY: **Read the directions for this game silently while I read them aloud. They are: "Read the problems below. Write your answer in the space under each problem. Draw a line under the word that shows what you did." Now do as many as you can on this and the next page, beginning with number 1. When you have finished this page, go right on to the next page. You may begin.**

Be sure that pupils understand what they are to do. If necessary, tell them again, but do not tell them the answers.

After 10 minutes,

SAY: **Now stop working and turn to the page with the big 5 near the top.**

TEST 4 — SECTION D

Time limit, 6 minutes

SAY: **Read the directions for this game silently while I read them aloud. They are: "Look at these problems. You are to add the numbers each time and write your answer under them."** (Demonstrate where pupils are to mark their answers, if necessary.) **Now do as many as you can on this page, beginning with number 1.**

After 6 minutes,

SAY: **Now stop working and turn to the page with the big 6 near the top.**

TEST 4 — SECTION E

Time limit, 8 minutes

SAY: **Read the directions for this game silently while I read them aloud. They are: "Look at these problems. You are to subtract, or take away, in each problem and write your answer under it." Now do as many as you can on this page, beginning with number 1.**

Circulate among pupils to see that they are writing their answers in the right places. Any pupil may be told ONCE that he should "take away."

After 8 minutes,

SAY: **Now stop working and turn to the page with the big 7 near the top.**

TEST 4 — SECTION F

Time limit, 9 minutes

SAY: **Read the directions for this game silently while I read them aloud. They are: "Look at these problems. You are to multiply, like 3 times 2 =, each time and write your answer under the problem." Now do as many as you can on this page, beginning with number 1.**

Check to see that pupils are writing their answers in the right places. DO NOT TRY TO TEACH MULTIPLICATION IF PUPILS DO NOT KNOW HOW TO DO IT.

After 9 minutes, or as soon as all pupils have stopped working,

SAY: **Now stop working and turn to the page with the big 8 near the top.**

TEST 4 — SECTION G [4]

Time limit, 10 minutes

SAY: **Read the directions for this game silently while I read them aloud. They are: "Look a these problems. You are to divide the second number by the first each time and write you answer on top of the problem." Now do a many as you can on this page, beginnin with number 1.**

Check to see that pupils are writing their an swers in the right places. Again, do not give assis ance to pupils or classes who do not know divisio

After 10 minutes, or as soon as pupils have a stopped working.

SAY: **Now stop working and put your penci down.**

If this completes a testing period, collect t booklets. Be sure that you have received all them.

Language Test [5]

TIME ALLOTMENT (Testing time only):

Test 5. Mechanics of English	20 minutes
Section A	5 minutes
Section B	5 minutes
Section C	10 minutes
Test 6. Spelling (and Handwriting)	10 minutes
Total time	30 minutes

NOTE: It is permissible to have a break or rest period after any test section.

MATERIALS REQUIRED:

For each pupil —

1 test booklet — *California Achievement Tests, Upper Primary Battery* or the *California Language Test, Upper Primary* (Form W or X)

1 ordinary lead pencil with eraser attached

1 eraser (if not attached to pencil)

In addition, for the examiner —

extra pencils

extra erasers

extra copy of test booklet (for demonstrat purposes)

stop watch, or watch or wall clock w second hand

If identifying data on booklets have not alre been completed, prepare on the chalkboar model of the part on the back cover of the boo in which identifying data are to be written. C plete the name of school, grade, teacher or ex iner, date of test, and city as they apply to group. Note the space set off by parentheses i middle of the third line for identifying data. space is provided for teachers or examiners wish pupils to indicate their section, class, number, etc., in order to facilitate the handli data and test booklets after tests have been sc

After checking to see that all pupils have cils and erasers, distribute the test booklets, up, if pupils do not already have them fro Arithmetic Test administration.

From this point on, certain parts of these tions are printed in **this different type face** an ceded by SAY:. These parts are to be re pupils.

[4] Division is not taught in some third grades. If it has not been taught to the class being examined, you may not wish to include this section on Division. See page 22 in the manual for a discussion of this situation and for scoring adjustments.

[5] If you are administering the Language Test only, be sure you have read the General Instructions to the Examiner on page 25 before proceeding.

Alternate directions for starting a test are presented in the two boxes below this paragraph. Test Battery administration directions are given first, followed by separate Language Test directions. Only one of the two is, therefore, to be read to pupils. Follow the directions in the appropriate box.

If administering the Battery booklet,

SAY: **Open your booklet to page 25 which says, "Language." (Help pupils find the place if necessary.) Below that, find "To Boys and Girls: The games in this part of the booklet will show what you know about capital letters, periods, commas, and so forth, and how well you can spell. Do not turn this page until told to do so." No one is expected to finish all of the parts nor to do everything correctly. You may do very well even if you do not finish everything. If you do not know an answer, go on to the next sentence. You may come back to it later if you have time.**

Now turn to the next page which has a big 1 near the top and fold it back so that the 1 shows.

Demonstrate and be sure that all pupils have Test 5 — Section A.

If administering the separate Language booklet,

SAY: **Look at the bottom of your booklet. It says: "To Boys and Girls: This booklet has some games you will like. They will show what you know about capital letters, periods, commas, and so forth, and how well you can spell. Do as many of them as you can. Do not turn this page until told to do so." No one is expected to do all of the parts nor to do everything correctly. You may do very well even if you do not finish everything. If you do not know an answer, go on to the next sentence. You may come back to it later if you have time. If your pencil breaks or will not write, hold it up and I will give you another.**

Now turn the booklet over to the back cover-page. Notice in the light space in the upper right-hand corner that there are lines for your name, grade, age, and so on. Copy the information from the model on the chalkboard and fill in your name, age — in years only, and date of birth. Also circle either "Boy" or "Girl" in the corner.

Give pupils time to record these data. Check to see that information is properly entered.

SAY: **When you have finished, turn your booklet back to the front page and wait for further instructions.**

When all pupils have finished,

SAY: **Now open the booklet to the next page which has a big 1 near the top and fold it back so that the 1 shows.**

Demonstrate and be sure that all pupils have their booklets folded back to Test 5 — Section A.

TEST 5 — SECTION A

Time limit, 5 minutes

SAY: **Read the directions for this game silently while I read them aloud. They are: "Below are some sentences and a story. You are to make an X on each word not already capitalized that should start with a capital letter. Remember to make only one X in each line."**

Ask pupils if they understand. Demonstrate how to make an X on the chalkboard.

SAY: **Now do as many as you can on this page, beginning with number 1. Make an X on each word that should start with a capital letter. You may begin.**

Circulate among pupils to be sure that they are marking their answers in the proper way.

After 5 minutes,

SAY: **Now stop working and turn to the page with the big 2 near the top.**

TEST 5 — SECTION B

Time limit, 5 minutes

SAY: **Read the directions for this game silently while I read them aloud. They are: "Below are some sentences and a story. You are to write in the periods, commas, and question marks that have been left out of the sentences and the story. Remember that only one punctuation mark, either a period, or a comma, or a question mark, is left out in each line."**

Be sure that pupils understand what they are to do.

SAY: **Now do as many as you can on this page, beginning with number 1.**

Circulate to see that pupils are marking their answers in the proper way.

After 5 minutes,

SAY: **Now stop working and turn to the page with the big 3 near the top.**

TEST 5 — SECTION C

Time limit, 10 minutes

SAY: **Read the directions for this game silently while I read them aloud. They are: "Below are some sentences that have two words set off by parentheses.** (Demonstrate parentheses on the chalkboard.) **You are to make an X on the one which you think is correct in each sentence." Now do as many as you can on this page, beginning with number 1.**

Circulate to see that pupils are marking their answers in the proper way.

After 10 minutes,

SAY: **Now stop working and turn to the page with the big 4 near the top.**

TEST 6 — SPELLING

Time required, about 10 minutes

SAY: **The directions for this game are: "Write the words that are pronounced." I shall give you some words to spell. I shall pronounce each word, use it in a sentence, and then pronounce it again. Then you will write the word that I pronounce on the line I name. On line 1 write the word . . .**

Read word number 1 from the appropriate form of the test below, the sentence, and then repeat word number 1. Pause.

SAY: **On line No. 2 write the word . . .**

Repeat the above routine for each word.

FORM W

1.	do	I can DO my work well	do
2.	is	This IS a dog	is
3.	run	Can you RUN fast?	run
4.	good	He is a GOOD boy	good
5.	my	See MY new knife	my
6.	live	I LIVE in the city	live
7.	late	It is LATE	late
8.	stone	The sharp STONE hurt his foot	stone
9.	song	They sang a SONG about the birds	song
10.	east	We are going EAST in the summer	east
11.	lady	The LADY is beautiful	lady
12.	half	You may eat HALF the candy	half
13.	father	My FATHER is brave	father
14.	past	It is three minutes PAST four	past
15.	build	We shall BUILD a boat	build
16.	broke	Who BROKE the window?	broke
17.	perfect	This is a PERFECT paper	perfect
18.	clerk	The CLERK was busy	clerk
19.	answer	Please ANSWER my question	answer
20.	result	What was the RESULT of the game?	result
21.	interest	How much INTEREST did you receive?	interest
22.	opinion	Was your OPINION right?	opinion
23.	business	It is a big BUSINESS for him to manage	business
24.	whether	Did you ask WHETHER you may go?	whether
25.	imagine	Can you IMAGINE a ship on fire?	imagine

FORM X

1.	and	Billy AND Bob play ball	and
2.	on	The book is ON the table	on
3.	now	"You may go NOW," he said	now
4.	top	He can spin the TOP	top
5.	into	He walked INTO the room	into
6.	him	Watch HIM swim	him
7.	tell	Don't TELL secrets	tell
8.	five	May I have FIVE cents?	five
9.	boat	The BOAT turned over	boat
10.	rest	Tired children should REST	rest
11.	even	The score was EVEN	even
12.	state	In which STATE do you live?	state
13.	fight	Cats and dogs FIGHT each other	fight
14.	enter	Please ENTER this room	enter
15.	dollar	The book costs one DOLLAR	dollar
16.	plan	Where do you PLAN to go?	plan
17.	enough	Have you had ENOUGH to eat?	enough
18.	direct	Policemen DIRECT traffic	direct
19.	length	What is the LENGTH of this room?	length
20.	include	Shall we INCLUDE John in our game?	include
21.	manner	She has a pleasant MANNER	manner
22.	possible	It is not POSSIBLE for me to go	possible
23.	minute	Wait a MINUTE for me	minute
24.	meant	I MEANT to telephone you	meant
25.	separate	I will SEPARATE the pens and the pencils	separate

When pupils have had the opportunity to write the last word of this test,

SAY: **Stop working. Put your pencils down.**

Collect the booklets. Be sure that you have received all of them.

HANDWRITING

No separate directions are needed for the administration of the handwriting test. The pupil provides the samples for scoring handwriting when he writes the first five spelling words. However, the examiner is reminded that the pupil's grade placement is not affected by his score on handwriting since handwriting is not an integral part of the language test score.

California Achievement Tests

PART 4

Directions for Scoring and Norms

DIRECTIONS FOR SCORING

Scoring procedures for the *California Achievement Tests* are adaptable to a variety of users' needs, from the scoring of individual tests to the processing of results on a school-, district-, or statewide basis. The following sections provide instructions for the most efficient means of scoring responses. The specific steps should be carefully observed in order to obtain the most accurate results.

After tests have been scored, the results may be transferred to profile sheets. Raw scores are converted to derived scores by means of the norms tables, pages 42-47. Step-by-step instructions for obtaining grade placements, Anticipated Achievement Grade Placements, percentiles, standard scores, or stanines are given in Part 2 under "Preparation of the Profile."

STANDARD RULES FOR SCORING

Listed below are the standard rules for scoring that are followed by all California Test Bureau scoring centers. These rules were applied to the processing of all data for the 1963 norming of the CAT:

1. The score for each section and test is the number of right responses.
2. An item for which two or more responses are marked is not scored.
3. An omitted item is not scored.
4. If three or more items in any one section have more than one mark, no derived scores (grade placements, percentiles, standard scores, or stanines) should be reported for that section.
5. If *no* item in a separately-timed section of the *California Achievement Tests* has been marked, that test section is declared *not attempted*. If one or more items in a timed section have been marked — even if all responses are wrong — that section has been *attempted*, and the score is combined with other acceptable test section scores to obtain test and Total Battery scores. (A zero raw score is given to a section in which all attempted items have been incorrectly answered. The derived score corresponding to a zero raw score is the lowest derived score given in the norms tables.)
6. No derived score can be obtained for a test when a section is not scorable (see items 4 and 5 above); no derived score can be obtained for the Total Battery when a test is invalidated.

HAND-SCORING PROCEDURES

The hand-scoring key should be used according to the following steps:

1. Fold the key along the vertical lines separating the columns and line up the answers on the key with the corresponding ones in the booklet. Make sure that you have the correct test and section number for the form you are using (as marked in the column heading) before proceeding to score a page.
2. The score for each test is the number right. Each item is to be considered either right or wrong. Mark the correct answers, count the number right, and record the number correct in the box provided at the end of each test in the booklet. (See "Standard Rules for Scoring.")
3. Transfer the score for each test to the appropriate box on the Diagnostic Profile Sheet on the back of the booklet.

A test booklet may be marked with the correct answers and used in place of the key as an aid in scoring. If desired, the key may be cut up into smaller strips (one for each page of the test) along the solid vertical lines and mounted on cardboard for more convenient scoring.

USE OF THE HANDWRITING SCALE

In rating cursive writing, compare the samples obtained with those of the handwriting scale on the scoring key. The corresponding grade placements and age equivalents may be read directly from the middle of the scale. When an obtained sample appears to fall between the scale samples, use the grade placement and age opposite the line which separates the scale samples.

If desired, three or more individuals may judge the same samples, and their ratings may be averaged, thus tending to give a more accurate or reliable judgment.

NORMS

The WXYZ Series of the *California Achievement Tests*, 1957 Edition, was re-normed according to a research plan designed to control bias from any one section of the country or any one type of educational program or school system.

The performance of the normative sample used in the 1963 re-norming represents a composite of a variety of curricular influences operating in school systems in several locales throughout the United States. In re-norming all levels of the California Achievement Tests, the complete program involved 15,351 concurrent administrations of the *California Achievement Tests* battery and the corresponding level of the *California Short-Form Test of Mental Maturity*. This included the re-administration after a one-year interval of both tests to 1,884 students within a single school system in order to assess the test-retest reliability of the two instruments, as well as to provide reliability data in addition to those computed using the Kuder-Richardson formula 21.

The total sample used in the norming process was obtained from two distinct sampling phases: (1) independent class units from seven geographic regions representing forty-nine states, and (2) complete school systems, including all students in Grades 1 through 12 from five school systems located in the northeastern, eastern, central, and western areas of the United States. Data from the complete systems, representing several different normative groups, each of which had a considerable degree of internal homogeneity, were used to check the consistency of the norms.

Within each grade, the norms are based on age-controlled samples representing an eighteen-month range (i.e., mean chronological age, plus or minus nine months). Norms based on this age-controlled sample therefore reflect the performance of students who for the most part have progressed through school at the normal rate. This age range allows for variations in entrance age and promotional practices within a system, but eliminates pupils who are patently atypical in age for the grade.

All pupils in the norm sample were administered the appropriate level of the 1963 Revision of the *California Short-Form Test of Mental Maturity* and the *California Achievement Tests* within a short time interval. The 1963 Revision of the *Short-Form*, which was scaled to the 1960 Revision of the Stanford-Binet Intelligence Scale, Form L-M, served as the reference for describing and controlling the norm sample.

The cases obtained from each of the two sampling phases were combined and then each case was categorized for processing according to grade placement and chronological age characteristics. All cases falling within the specified chronological age boundaries at each grade level were used. Since the same group was tested with both instruments, obtained performance at each level was used in establishing the relationship between the mean *Short-Form* total raw score and the mean raw score on each of the ten CAT variables. After the relationship of the *Short-Form* and CAT scores had been established, the obtained performance of the sample was adjusted through statistical procedures to conform to a standard population having mental ability characteristics specified in terms of mean I.S.I.[1] scores for each grade. The adjusted values of the ten CAT variables were then plotted and smoothed to determine grade placements. These initial plots were empirically derived from data based on October testing; all other grade placement values lying between these plotted points were determined by interpolation.

The CAT norms are designed to ensure a contin uous grade placement scale. The processes of scal ing and determining grade placement equivalents as described above, provide for this continuity measurement. Data from the two phases of th sampling complemented each other. The separa classroom unit phase supplied data from cas whose performance represented a cross-section the many different educational influences affecti the nation's schools. On the other hand, the testi of the complete systems provided data based up educational characteristics common to a giv school system — such as educational objectiv curricular and instructional influences, and adm istrative practices operating within the system. T homogeneous background provided a basis for v ifying the continuity of the grade placement sc Thus, the complete systems testing reflects the fu tioning of the norms within each grade and f grade to grade covering a twelve-grade span. testing of the complete school systems produ data which are in effect comparable to t obtained from longitudinal studies.

In summary, the 1963 norms for the *Calif Achievement Tests, Upper Primary Level*, are t sult of a controlled normative design that req within each grade, a normal distribution of m ability and typical age-grade relationships number of cases used at each grade for this is shown in column 2 of Table 17 below. Co 3 and 4 show the specified controls applied norm sample at each grade.

TABLE 17

CHARACTERISTICS OF SAMPLE POPULAT USED TO ESTABLISH 1963 NORMS FOR CALIFORNIA ACHIEVEMENT TESTS, UPPER PRIMARY LEVEL

GRADE	NO. OF CASES	MEAN I.S.I.*	ME (In
2	1216	100	
3	1343	100	
4	1351	100	

*(S.E. of Mean I.S.I. for 1000 cases is less than ½ I.S.

In addition to the sampling design, a r other quality controls were imposed o norming and treatment of the data.

[1] See page 38 for definition of I.S.I.

1. Special efforts were made to have the participating schools include only classes designated as typical for the community. Neither accelerated nor retarded classes were included. Mixed classes—i.e., those consisting of more than one grade level—were avoided.
2. No classes which had been recently administered either the *California Achievement Tests* or the CTMM, *Long-* or *Short-Form*, were included. This restriction avoided the possibility of spurious practice effects.
3. Most testing was done on Tuesdays, Wednesdays, and Thursdays—days which did not immediately follow or precede holidays or special events. This tended to minimize the influence of fatigue following a weekend or the disturbance created by special events.
4. Because the total testing time for both batteries was nearly three hours, testing was distributed over two or three days in order to prevent the examinees from becoming test-weary.

There has been much misunderstanding and misuse of norms in the past. Norms should not be regarded as rigid standards to be attained by all school groups under all circumstances. Instead, they should be regarded as relatively stable points of reference to be used in interpreting the results of testing in a particular school or community.

Norms reflect the typical performance of defined groups of similar individuals on test items which have been carefully selected and validated. When the obtained scores of a testing program from a particular school or community are significantly above or below the test norms, it simply means that these scores are above or below the average scores of the norm sample. Such results do not necessarily indicate superior or inferior school work. The testing program reveals facts without interpreting them; interpretation is the responsibility of local school personnel.

Among the factors which may account for deviations from test norms are differences in courses of study, materials of instruction, time allotments, and emphasis on certain skill areas, as well as differences in the quality of teaching and the age and intelligence of students. Norms should serve as a point of departure in investigating the reasons for the obtained results and in determining the desirability of possible modifications of the factors which account for the obtained results.

For discussion of the uses, profiling, and interpretation of test results with reference to the 1963 norms for the *California Achievement Tests*, see Part 2 of this manual, pages 15-23.

GRADE PLACEMENT SCALE

The units on the grade placement scales of the *California Achievement Tests* correspond to years and months. The full scale range is from Grades 1.0 to 14.0 inclusive through the five levels. Each year or unit of the grade placement scale is subdivided into decimal values corresponding to ten months of the normal school year.

The raw scores of the six principal components of the battery are converted into grade placement units. A point on the grade placement scale represents the average achievement of pupils of designated chronological age in the national norm sample whose median I.Q. is 100 for Grades 1 through 7, 101 for Grade 8, 102 for Grade 9, 103 for Grade 10, 104 for Grade 11, and 105 for Grade 12. Thus, a point on the grade placement scale (2.0, 3.0, 4.0, etc.) is an empirically-scaled derived score based on a sample from the national norm group, having precisely set and defined I. Q. and chronological age requirements. All values on the grade placement scale, in the tables, and on the profile were determined from the data of actual cases at each point. Hence, the units throughout the grade placement scale indicate as accurately as possible the meaning of test scores for individuals of average intelligence and typical chronological age at each grade classification, based upon empirical data.

The grade placement scale is related to chronological age (which served as a control in its construction) in such a way that achievement test scores can be obtained for an individual or class of any chronological age. The grade placement scale thus permits flexibility in the interpretation of the test results. These are summarized as follows:

1. *Actual grade placement norms* are most frequently employed as a basis for interpretation. Individual grade placements or class medians are compared to a typical nationwide group of the identical actual grade placement.
2. *Age norms* use chronological age as the criterion for interpretation. Individual ages or class medians are compared to a typical nationwide group of the identical chronological age.
3. *Anticipated Achievement norms* are relatively new devices which go a step beyond expectancy tables. A discussion of Anticipated Achievement concludes this section.

PERCENTILES, STANDARD SCORES, AND STANINES

Tables 21 through 25 are used to obtain percentiles, standard scores, and stanines for the subtotals and total raw scores in each subject area and for the Total Battery.

1. *Percentile norms* provide a comparison of individual students with each other, with their summarized group percentiles, and with a sampling of the nationwide population. They can also be used for compiling useful cumulative records. A percentile can be described as a point on a 100-point scale which gives the per cent of cases that falls below that particular point. For example, a student whose test performance places him at the 70th percentile rank equals or exceeds 70 per cent of the sample on which the test was standardized. This score may also be

interpreted to mean that the remaining 30 per cent of the individuals in the standardization group exceeded his test performance.

2. *Standard scores* make up a linear scale of which about fifty points (representing a range of five standard deviations) comprise the practical range of scores. They can be used for the comparison of individual students with each other, with their summarized group scores, and with a sampling of the nationwide population. They can also be used, like percentile ranks, for interpreting data in cumulative records. Unlike percentile ranks, standard scores can be used in computations which combine and average data.

3. *The stanine scale* is an adaptation of the standard score scale utilizing larger intervals than the standard score units. While there are fewer stanines, they have correspondingly greater stability. Stanines are a type of standard score with a mean of 5 and a standard deviation of 2. Like other standard scores, stanines can be used in computations which combine and average scores from different tests when the standardization populations are the same.

ANTICIPATED ACHIEVEMENT

HISTORICAL BACKGROUND

Educators have long been aware that achievement test scores reflect mental maturity in addition to acquired skills. Consequently, they have expected greater achievement from bright pupils than from average or dull pupils. When interpreting achievement test results, teachers have made [illegible] allowances for individual differences in [illegible]. Many have later found that bright [illegible] failure to live up to expectancy [illegible] needed to do better than [illegible]

[illegible] educational measurement, various [illegible] been devised to integrate the [illegible] of intelligence and achievement [illegible] data: educational ages and quotients, achievement ages and quotients, intelligence grade placements, scattergrams, etc. Some of these have helped test users interpret achievement scores of individual pupils at varying levels of mental age or performance on intelligence tests.

Horn[2] was among the first to produce practical formulas applying chronological age and mental age data and yielding an expected achievement which could be expressed in grade placement units. Horn's formulas were used to compile tables of expectancies in several school systems, and demonstrated that expected grade placement tables integrated intelligence and achievement test data much more accurately than could usually be done by subjective methods. However, the main deficiencies discovered in the use of Horn's formulas were that (1) no adjustment was made for actual months of school experience, (2) performance of individual pupils was compared with that of unlike individuals, and (3) the formulas applied to achievement in the separate basic skills, disregarding intra-individual differences.

Clark[3] subsequently devised a procedure for evaluating achievement results by adjusting achievement test norms for group deviations of intelligence.

The California Test Bureau, in its 1957 dual standardization of the *California Test of Mental Maturity* Series and the *California Achievement Tests* refined previous expectancy concepts by introduction of Anticipated Achievement.[4] The administration of the two test batteries concurrently on a single population provided comparable intelligence and achievement normative data. The CAT norms represent the Anticipated Achievement of a certain grade placement and its related chronological age. The Anticipated Achievement tables found on pages 48-57 resolve the objections to the previously-described methods of defining expectancies. The tables adjust Anticipated Achievement to the actual months of school experience that the individual has had in terms of his actual grade placement. The values in these tables, expressed in grade placements, also allow for the comparison of the performance of an individual with the performance of like individuals rather than with that of an average. In addition, expectancies are set up for each of the basic skills and component parts of those skills.

ANTICIPATED ACHIEVEMENT GRADE PLACEMENTS

Anticipated Achievement Grade Placements are interpreted as the norm performance of a nationwide sample of pupils in the same grade, having comparable chronological age and mental age characteristics. Since these values have been established by a norming process (see below), they may be considered as the test performance which the pupil would be expected to attain. The Anticipated Achievement norms indicate, for each of the ten scores on the CAT, the expected influence of years of schooling as well as the interrelated effect of chronological age and mental age deviations from the national average. The effect of these two latter variables is controlled through the adjustment features incorporated in the Intellectual Status Index, which must be used to enter the tables on pp. 48-57. The I.S.I. differs from an intelligence quotient in that the chronological age typical of pupils at a particular grade level replaces the individual's chronological age as the reference point. (For procedures used to calculate the I.S.I., see Part 3 of the CTMM Manual, 1963 Revision.) The deviation of a pupil's actual test performance

[2] Alice M. Horn, *Uneven Distribution of Effects of Specific Factors* (Los Angeles: University of Southern California Press, 1941), 107 pp.

[3] Willis W. Clark, "Evaluating School Achievement in Basic Skills in Relation to Mental Ability," *Journal of Educational Research*, 46:179-91, November, 1952.

[4] See "New Concepts in Norms" by William M. Shanner, reprinted from *The Positive Values in the American Educational System* (Washington, D.C.: American Council on Education, 1959). Reprints available upon request from the California Test Bureau. Also see the *Technical Report* on the *California Achievement Tests*, 1957 Edition.

from his Anticipated Achievement should also be interpreted with consideration of the standard error of measurement. The reliability of an individual's score and the standard error of measurement applicable to this test score is discussed on page 8 of this manual. Anticipated Achievement, therefore, is an adjustment for pupils with chronological ages differing from the age-grade placements reported in the norm tables to give reasonable levels of performance that may be expected from individual pupils. It is an approach to individual pupil norms which tends to obviate the condition long recognized by test users: That group norms may be inappropriate if the local school, class, or individual tested differs significantly in some essential characteristic from the reference group on which the norms are based.

The Anticipated Achievement tables adjust the performance expected of a student through the procedures necessary to obtain the I.S.I. value. This device also provides for comparison of the performance of individual pupils with that of like individuals. Hence, if a pupil of 156 months C.A. and 168 months M.A. (I.Q. 106) is tested at Grade 8.3, the teacher should compare the performance of that pupil with the performance of other individuals having the same C.A., M.A., I.Q., and actual grade placement.

ADJUSTMENTS MADE THROUGH USE OF THE I.S.I.

The Intellectual Status Index establishes the pupil's rank order in a typical grade, contrasting individual assessment with group assessment and indicating deviations of the individual from the group. A pupil with a given I.Q. who is younger than the chronological age typical for his actual grade placement will have a lower I.S.I. than pupils with comparable I.Q.'s who are either at age or over-age for the same actual grade placement. The method of determining the I.S.I. provides a basis for adjusting expectancy downward for the younger, brighter pupil and upward for the older, slower pupil.

The effect of the adjustment through use of the I.S.I. can be demonstrated by a comparison of an over-age pupil with an under-age pupil. Pupils A and B were alike in the following respects:

Actual Grade Placement	5.1
Grade Chronological Age	127 months
Total Raw Score on CTMM	72
Intellectual Status Index	107
Mental Age	139 months

They were different in two factors:

	Pupil A	Pupil B
Chronological Age	118 months	135 months
Intelligence Quotient	114	101

Pupil A entered the first grade at the age of 5 years 10 months, Pupil B at the age of 7 years 3 months. Both progressed normally through the grades so that each had the same number of months of school experience.

It can be seen that Pupil A is younger and brighter than Pupil B, although the identical mental age indicates that both have the capability of performing school tasks of the same difficulty. The Intellectual Status Index is the same for both pupils because they are in the same grade (5.1) and achieved the same total raw score on the CTMM. The I.S.I. of 107 represents an adjustment downward from an I.Q. of 114 for the younger pupil and upward from 101 for the older pupil. Therefore, the same achievement in the basic skills may be expected from both. There will be changes in the I.S.I. at subsequent levels for each of these pupils necessitating an updating of the I.S.I. at each CAT administration.

OTHER FACTORS IN THE INTERPRETATION OF ANTICIPATED ACHIEVEMENT

It is of paramount importance that differences in local courses of study be taken into account when interpreting any test scores. The overall curriculum is a very important factor in determining the rate at which achievement test scores increase from year to year. The nature of curricular offerings in general has important effects on achievement. Formal instruction in reading usually begins earlier than that in arithmetic and language. Progress in arithmetic is generally somewhat slower than in reading. It is also found that performance in arithmetic fundamentals tends to develop earlier than performance in arithmetic reasoning. Formal reading instruction generally ceases after elementary school. For a large percentage of the secondary school population, instruction in spelling and mathematics is negligible. By contrast, mechanics of English continues to be taught through secondary school and in many instances well into college.

Individual data from teachers' observations and cumulative records must be reflected in the interpretation of Anticipated Achievement Grade Placements. Individual abilities, attention span, emotional maturity, health status, breadth of experience outside of school, motivations, interests, and the like are all factors to be considered to bring expectancies into perspective. When individual test scores are interpreted with the use of all available data, including Anticipated Achievement Grade Placements, educational guidance and the interpretation of *California Achievement Tests* scores approach a degree of individualization unique in group standardized testing with group norms.

CONSTRUCTION OF THE ANTICIPATED ACHIEVEMENT TABLES

The Anticipated Achievement tables were developed by a multiple norming procedure. The same raw score grade placement equivalents established for the basic CAT norm tables were also used in developing the Anticipated Achievement norms. It was essential that recognized standards of performance be applied to the various norm groups represented in the Anticipated Achieve-

ment tables. The grade placement norms served that purpose because they represented criteria of performance based upon a population having a defined intelligence and chronological age status.

The maximum number of possible cases was selected from the total norm population on the basis of a defined actual grade placement and used to establish the Anticipated Achievement norms. Each student represented in the Anticipated Achievement sample population had been administered the appropriate level of both the *California Short-Form Test of Mental Maturity*, 1963 Revision, and the *California Achievement Tests*, 1957 Edition. The *Short-Form* scores obtained by the population representing a given grade were expressed in terms of I.S.I. values. The CAT scores for the same group were expressed in grade placements.

Samples of pupils with successively higher and lower I.S.I.'s were drawn from the selected norm population available at each grade. The ten scores of the CAT battery, representing performance of pupils located within each of the I.S.I. brackets above and below the middle range, were independently normed. Within each of these I.S.I. brackets, mean grade placement was computed for each CAT score, based upon the performance of the population within that bracket. These obtained mean score values were then plotted and smoothed. The initially plotted values described above were empirically derived from October testing. All Anticipated Achievement Grade Placement values representing other months of the school year were determined by interpolation.

The importance of adjusting achievement norms to reflect the mental ability level of a class or school is indicated in Table 18 which reports variations in median I.Q.'s for over 1,000 grade groups.

TABLE 18

PERCENTILE EQUIVALENTS FOR MEDIAN I.Q.'s OF VARIOUS CLASSES AT GRADES 1-12*

PERCENTILE	GRADES 1-7	GRADE 8	GRADE 9	GRADE 10	GRADE 11	GRADE 12
99	115	116	116	117	118	120
95	111	112	112	113	114	116
90	108	109	109	110	111	113
80	105	106	106	107	108	110
70	103	104	104	105	106	107
60	101	102	103	104	105	106
50	100	101	102	103	104	105
40	98	99	99	100	101	102
30	96	97	97	98	99	100
20	93	94	95	96	97	99
10	89	90	92	93	94	95
5	85	86	88	89	90	91
1	80	81	84	85	86	87

*For data from original study, see Clark, op. cit., pp. 179-191.

TABLE 19

ACTUAL GRADE PLACEMENTS AND CORRESPONDING GRADE CHRONOLOGICAL AGES FOR DETERMINING INTELLECTUAL STATUS INDEX

Gr. Pl.	C.A.	Gr. Pl.	C.A.	Gr. Pl.	C.A.	Gr. Pl.	C.A.	Gr. Pl.	C.A.	Gr. Pl.	C.A.	Gr. Pl.	C.A.	Gr. Pl.	C.A.
1.0	76	3.0	101	5.0	125	7.0	150	9.0	174	11.0	197	13.0	220	15.0	243
1.1	77	3.1	102	5.1	127	7.1	151	9.1	175	11.1	198	13.1	221	15.1	244
1.2	78	3.2	103	5.2	128	7.2	153	9.2	176	11.2	199	13.2	222	15.2	245
1.3	80	3.3	104	5.3	129	7.3	154	9.3	178	11.3	200	13.3	223	15.3	246
1.4	81	3.4	106	5.4	130	7.4	155	9.4	179	11.4	202	13.4	224	15.4	247
1.5	82	3.5	107	5.5	132	7.5	156	9.5	180	11.5	203	13.5	226	15.5	248
1.6	83	3.6	108	5.6	133	7.6	158	9.6	181	11.6	204	13.6	227	15.6	250
1.7	85	3.7	109	5.7	134	7.7	159	9.7	182	11.7	205	13.7	228	15.7	251
1.8	86	3.8	111	5.8	135	7.8	160	9.8	183	11.8	206	13.8	229	15.8	252
1.9	87	3.9	112	5.9	137	7.9	161	9.9	184	11.9	207	13.9	230	15.9	253
2.0	88	4.0	113	6.0	138	8.0	163	10.0	186	12.0	208	14.0	231	16.0	254
2.1	89	4.1	114	6.1	139	8.1	164	10.1	187	12.1	210	14.1	232	16.1	255
2.2	91	4.2	116	6.2	140	8.2	165	10.2	188	12.2	211	14.2	234	16.2	256
2.3	92	4.3	117	6.3	142	8.3	166	10.3	189	12.3	212	14.3	235	16.3	258
2.4	93	4.4	118	6.4	143	8.4	167	10.4	190	12.4	213	14.4	236	16.4	259
2.5	95	4.5	119	6.5	144	8.5	168	10.5	191	12.5	214	14.5	237	16.5	260
2.6	96	4.6	121	6.6	145	8.6	169	10.6	192	12.6	215	14.6	238		
2.7	97	4.7	122	6.7	146	8.7	171	10.7	193	12.7	217	14.7	239		
2.8	98	4.8	123	6.8	148	8.8	172	10.8	195	12.8	218	14.8	240		
2.9	99	4.9	124	6.9	149	8.9	173	10.9	196	12.9	219	14.9	242		

Norms Tables

TABLE 20
1963 GRADE PLACEMENT AND AGE NORMS
CALIFORNIA ACHIEVEMENT TESTS — UPPER PRIMARY LEVEL

GRADE PLACEMENT	READING			ARITHMETIC			LANGUAGE			TOTAL BATTERY	AGE (IN MONTHS)*	GRADE PLACEMENT
	Reading Vocabulary	Reading Comprehension	Total Reading	Arithmetic Reasoning	Arithmetic Fundamentals	Total Arithmetic	Mechanics of English	Spelling	Total Language			
1.0	1-5		1-6	1	1-7	1-7	1-4	1	1-5	1-18	76	1.0
1.1	6-8		7-8	—	8-10	8-11	5-6	—	6-7	19-26	77	1.1
1.2	9		9-10	—	11-13	12-15	7	2	8-9	27-34	78-9	1.2
1.3	10	1	11-12	2	14-16	16-18	8	—	10	35-39	80	1.3
1.4	11	2	13-14	—	17-19	19-21	9	3	11-12	40-46	81	1.4
1.5	12	3	15-16	—	20-22	22-25	10	—	13	47-53	82	1.5
1.6	13	4-5	17-18	3	23-25	26-28	11	—	14-15	54-60	83-4	1.6
1.7	14	6	19-21	—	26-28	29-32	12	4	16	61-68	85	1.7
1.8	15	7	22-24	4	29-32	33-36	—	—	17	69-76	86	1.8
1.9	16	8-9	25-26	—	33-35	37-40	13	5	18	77-83	87	1.9
2.0	17	10	27-28	5	36-38	41-44	14	—	19	84-93	88	2.0
2.1	18	11	29-31	—	39-42	45-48	15	—	20	94-105	89-90	2.1
2.2	19	12-13	32-33	6	43-46	49-52	16	6	21-22	106-12	91	2.2
2.3	20	14	34-35	7	47-49	53-56	17	—	23-24	113-16	92	2.3
2.4	21	15-16	36-38	—	50-53	57-60	18	7	25	117-23	93-4	2.4
2.5	22	17	39-40	8	54-57	61-65	19	—	26-27	124-32	95	2.5
2.6	23	18	41-42	9	58-61	66-71	20	8	28	133-42	96	2.6
2.7	24	19-20	43-44	10	62-66	72-77	21	—	29	143-51	97	2.7
2.8	25	21	45-47	11	67-71	78-84	22	—	30	152-61	98	2.8
2.9	26	22-23	48-50	12	72-76	85-90	23	9	31-32	162-73	99-100	2.9
3.0	27	24	51-52	13	77-81	91-96	24	—	33-34	174-82	101	3.0
3.1	28	25	53-55	14	82-86	97-100	25	10	35	183-93	102	3.1
3.2	29-30	26-27	56-58	15	87-91	101-5	26	—	36-37	194-202	103	3.2
3.3	31	28-29	59-61	16	92-96	106-8	27	11	38	203-15	104-5	3.3
3.4	32	30-31	62-64	17	97-101	109-14	28-29	—	39-40	216-26	106	3.4
3.5	33	32-33	65-67	18	102-6	115-20	30	12	41-42	227-38	107	3.5
3.6	34-35	34-35	68-70	19	107-9	121-28	31-32	—	43-45	239-47	108	3.6
3.7	36-37	36-37	71-73	20-21	110-11	129-33	33-35	13	46-49	248-61	109-10	3.7
3.8	38	38-39	74-76	22-24	112-14	134-39	36-40	—	50-54	262-72	111	3.8
3.9	39	40-41	77-79	25	115-16	140-44	41-46	14	55-58	273-80	112	3.9
4.0	40	42-43	80-82	26-27	117-20	145-49	47-48	—	59-61	281-92	113	4.0
4.1	—	44-45	83-84	28-29	121-23	150-54	49-50	15	62-65	293-306	114-15	4.1
4.2	41	46	85-86	30-31	124-27	155-59	51-52	16	66-67	307-13	116	4.2
4.3	—	47	87-88	32-33	128	160-64	53	—	68-70	314-20	117	4.3
4.4	42	48-49	89-90	34	129-31	165-68	54	17	71	321-29	118	4.4
4.5	—	50	91-92	35-36	132-33	169-72	55	18	72-73	330-38	119-20	4.5
4.6	43	51	93-94	37	134	173-76	56	—	74	339-44	121	4.6
4.7	44	52	95-96	38	135-37	177-81	57	19	75-76	345-50	122	4.7
4.8	—	53	97-98	39	138-43	182-85	58	20	77-78	351-57	123	4.8
4.9	—	54	99	—	144-47	186-88	59	21-23	79-82	358-64	124	4.9
5.0	45	55	100	40	148+	189+	60	24+	83+	365+	125-6	5.0

*Where two values appear on the same line, the first listed is the computed value. Subject, educational, or chronological age equivalent to grade placement.

TABLE 21
PERCENTILE RANKS — STANDARD SCORES — STANINES
1963 NORMS — LOW 2

%-ILE INTERVAL	%-ILE RANK	RAW SCORE										STANDARD SCORE	STANINE
		RV	RC	TR	AR	AF	TA	ME	SP	TL	TB		
99	99	40-45	38-55	77-100	21-40	103-150	122-190	38-60	14-25	50-85	242-375	73	9
	99	39	37	75-76	20	101-102	118-121	37	—	48-49	236-241	72	
98	98	38	36	73-74	—	98-100	115-117	36	—	47	230-235	71	
	98	37	35	71-72	19	95-97	112-114	35	13	46	223-229	70	
95	97	36	34	69-70	18	92-94	108-111	34	—	45	217-222	69	
	96	35	32-33	66-68	—	89-91	105-107	33	—	43-44	211-216	68	
	96	34	31	64-65	17	87-88	102-104	32	12	42	204-210	67	8
	95	33	30	62-63	16	84-86	98-101	31	—	41	198-203	66	
	93	32	29	60-61	—	81-83	95-97	30	—	39-40	192-197	65	
90	92	31	28	58-59	15	78-80	92-94	29	11	38	185-191	64	
	90	30	26-27	56-57	14	76-77	88-91	28	—	37	179-184	63	
	88	29	25	54-55	—	73-75	85-87	27	10	35-36	173-178	62	
	86	28	24	52-53	13	70-72	82-84	26	—	34	166-172	61	7
80	84	27	23	50-51	12	67-69	79-81	25	—	33	160-165	60	
	82	—	22	48-49	—	65-66	75-78	24	9	32	154-159	59	
	79	26	20-21	46-47	11	62-64	72-74	23	—	30-31	147-153	58	
	76	25	19	44-45	10	59-61	69-71	22	—	29	141-146	57	
70	73	24	18	42-43	—	56-58	65-68	21	8	28	135-140	56	6
	69	23	17	40-41	9	53-55	62-64	20	—	26-27	128-134	55	
	66	22	16	38-39	8	51-52	59-61	19	7	25	122-127	54	
60	62	21	14-15	36-37	—	48-50	55-58	18	—	24	116-121	53	
	58	20	13	34-35	7	45-47	52-54	17	—	22-23	109-115	52	
50	54	19	12	32-33	6	42-44	49-51	16	6	21	103-108	51	5
	50	18	11	29-31	—	40-41	45-48	15	—	20	97-102	50	
	46	17	10	27-28	5	37-39	42-44	14	—	19	91-96	49	
40	42	16	9	25-26	—	34-36	39-41	13	5	17-18	84-90	48	
	38	15	8	23-24	4	31-33	35-38	12	—	16	78-83	47	
30	34	14	7	22	—	29-30	32-34	11	—	15	72-77	46	4
	31	13	6	20-21	—	26-28	29-31	10	4	13-14	65-71	45	
	27	12	—	18-19	3	23-25	25-28	9	—	12	59-64	44	
20	24	11	5	16-17	—	20-22	22-24	8	—	11	53-58	43	
	21	10	4	14-15	—	18-19	20-21	—	3	10	46-52	42	
	18	—	—	13	2	16-17	18-19	7	—	9	40-45	41	3
	16	9	3	11-12	—	14-15	16-17	6	—	8	36-39	40	
10	14	8	—	10	—	13	14-15	—	—	7	31-35	39	
	12	7	2	9	—	11-12	12-13	5	2	6	25-30	38	
	10	—	—	8	1	10	10-11	—	—	5	22-24	37	
	8	6	—	7	—	8-9	8-9	4	—	—	18-21	36	2
5	7	5	1	6	—	7	7	—	—	4	15-17	35	
	5	4	—	5	—	6	6	3	—	—	12-14	34	
	4	—	—	4	—	5	5	—	—	3	10-11	33	
	4	3	—	3	—	4	4	2	1	—	8-9	32	
	3	2	—	2	—	3	3	—	—	2	6-7	31	
2	2	—	—	—	—	—	—	—	—	—	5	30	1
	2	1	—	1	—	2	2	1	—	1	3-4	29	
1	1	—	—	—	—	—	—	—	—	—	2	28	
	1	—	—	—	—	1	1	—	—	—	1	27	

TABLE 22
PERCENTILE RANKS — STANDARD SCORES — STANINES
1963 NORMS — HIGH 2

%-ILE INTERVAL	%-ILE RANK	RAW SCORE										STANDARD SCORE	STANINE
		RV	RC	TR	AR	AF	TA	ME	SP	TL	TB		
99	99	44-45	49-55	92-100	34-40	132-150	159-190	51-60	19-25	69-85	320-375	73	9
	99	43	48	90-91	33	129-131	156-158	50	—	67-68	312-319	72	
98	98	42	47	88-89	32	126-128	152-155	49	18	65-66	304-311	71	
	98	—	45-46	86-87	31	123-125	148-151	47-48	—	63-64	297-303	70	
95	97	41	44	84-85	30	120-122	144-147	46	—	62	289-296	69	
	96	40	43	82-83	29	117-119	141-143	45	17	60-61	281-288	68	
	96	39	42	79-81	28	114-116	137-140	43-44	—	58-59	274-280	67	8
	95	—	40-41	77-78	27	111-113	133-136	42	16	56-57	266-273	66	
	93	38	39	75-76	26	108-110	129-132	41	—	55	258-265	65	
90	92	37	38	73-74	25	105-107	126-128	39-40	15	53-54	251-257	64	
	90	36	36-37	71-72	24	102-104	122-125	38	—	51-52	243-250	63	
	88	35	35	69-70	23	99-101	118-121	37	14	49-50	235-242	62	
	86	34	34	66-68	22	96-98	114-117	35-36	—	47-48	228-234	61	7
80	84	33	32-33	64-65	21	93-95	111-113	34	13	46	220-227	60	
	82	—	31	62-63	19-20	90-92	107-110	33	—	44-45	212-219	59	
	79	32	30	60-61	18	87-89	103-106	31-32	12	42-43	205-211	58	
	76	31	28-29	58-59	17	84-86	99-102	30	—	40-41	197-204	57	
70	73	30	27	56-57	16	81-83	96-98	29	11	39	189-196	56	6
	69	29	26	54-55	15	78-80	92-95	27-28	—	37-38	182-188	55	
	66	28	25	51-53	14	75-77	88-91	26	10	35-36	174-181	54	
60	62	27	23-24	49-50	13	72-74	84-87	25	—	33-34	167-173	53	
	58	26	22	47-48	12	69-71	81-83	23-24	9	32	159-166	52	
50	54	25	21	45-46	11	66-68	77-80	22	—	30-31	151-158	51	5
	50	24	19-20	43-44	10	63-65	73-76	21	—	28-29	144-150	50	
	46	23	18	41-42	9	60-62	69-72	19-20	8	26-27	136-143	49	
40	42	22	17	38-40	8	57-59	66-68	18	—	25	128-135	48	
	38	21	15-16	36-37	—	54-56	62-65	17	7	23-24	121-127	47	
30	34	20	14	34-35	7	51-53	58-61	15-16	—	21-22	113-120	46	4
	31	19	13	32-33	6	48-50	54-57	14	6	19-20	105-112	45	
	27	18	11-12	30-31	—	45-47	51-53	13	—	18	98-104	44	
20	24	17	10	28-29	5	42-44	47-50	12	—	17	90-97	43	
	21	16	9	25-27	—	39-41	43-46	11	5	15-16	82-89	42	
	18	—	8	23-24	4	36-38	39-42	10	—	14	75-81	41	3
	16	15	7	21-22	—	33-35	36-38	9	4	12-13	67-74	40	
10	14	14	6	19-20	3	30-32	32-35	8	—	11	59-66	39	
	12	13	5	17-18	—	27-29	28-31	—	—	10	52-58	38	
	10	12	—	16	—	24-26	25-27	7	3	9	48-51	37	
	8	11	4	14-15	2	21-23	22-24	6	—	8	44-47	36	2
5	7	10	—	13	—	18-20	19-21	5	—	7	39-43	35	
	5	9	3	12	—	15-17	16-18	—	—	6	34-38	34	
	4	8	—	10-11	1	12-14	13-15	4	2	5	29-33	33	
	4	7	—	9	—	10-11	10-12	—	—	4	24-28	32	
	3	6	2	8	—	8-9	8-9	3	—	—	18-23	31	
2	2	5	—	6-7	—	6-7	6-7	—	—	3	15-17	30	1
	2	4	—	5	—	5	5	2	—	2	10-14	29	
1	1	3	1	3-4	—	3-4	3-4	—	1	—	7-9	28	
	1	1-2	—	1-2	—	1-2	1-2	1	—	1	1-6	27	

TABLE 23

PERCENTILE RANKS — STANDARD SCORES — STANINES

1963 NORMS — LOW 3

%-ILE INTERVAL	%-ILE RANK	RAW SCORE										STANDARD SCORE	STANINE
		RV	RC	TR	AR	AF	TA	ME	SP	TL	TB		
99	99	45	51-55	95-100	37-40	148-150	176-190	56-60	22-25	75-85	346-375	73	9
	99	—	50	93-94	36	145-147	173-175	55	—	73-74	339-345	72	
98	98	44	49	92	35	142-144	170-172	53-54	21	71-72	332-338	71	
	98	—	48	90-91	34	140-141	166-169	52	—	70	325-331	70	
95	97	43	47	89	33	137-139	163-165	51	20	68-69	318-324	69	
	96	—	46	87-88	32	134-136	159-162	49-50	—	66-67	311-317	68	
	96	42	45	86	31	131-133	156-158	48	19	64-65	304-310	67	8
	95	41	44	84-85	30	128-130	152-155	46-47	—	63	297-303	66	
	93	—	43	83	29	125-127	149-151	45	18	61-62	290-296	65	
90	92	40	42	81-82	28	123-124	145-148	44	—	59-60	283-289	64	
	90	39	41	80	27	120-122	142-144	42-43	17	57-58	276-282	63	
	88	—	40	78-79	26	117-119	139-141	41	—	56	269-275	62	
	86	38	38-39	76-77	25	114-116	135-138	40	16	54-55	262-268	61	7
80	84	37	37	74-75	24	111-113	132-134	38-39	—	52-53	255-261	60	
	82	36	36	72-73	23	108-110	128-131	37	15	50-51	248-254	59	
	79	35	35	70-71	22	106-107	125-127	36	14	49	241-247	58	
	76	34	34	68-69	21	103-105	121-124	34-35	—	47-48	234-240	57	
70	73	—	32-33	66-67	20	100-102	118-120	33	13	45-46	227-233	56	6
	69	33	31	64-65	19	97-99	114-117	32	—	43-44	220-226	55	
	66	32	30	62-63	18	94-96	111-113	30-31	12	42	213-219	54	
60	62	31	29	60-61	17	92-93	108-110	29	—	40-41	206-212	53	
	58	30	28	58-59	16	89-91	104-107	28	11	38-39	199-205	52	
50	54	29	26-27	56-57	15	86-88	101-103	26-27	—	36-37	192-198	51	5
	50	28	25	54-55	14	83-85	97-100	25	10	35	185-191	50	
	46	27	24	52-53	13	80-82	94-96	23-24	—	33-34	178-184	49	
40	42	26	23	50-51	12	77-79	90-93	22	9	31-32	171-177	48	
	38	25	22	48-49	11	75-76	87-89	21	—	29-30	164-170	47	
30	34	24	20-21	46-47	10	72-74	83-86	19-20	8	28	157-163	46	4
	31	23	19	44-45	9	69-71	80-82	18	—	26-27	150-156	45	
	27	—	18	42-43	—	66-68	77-79	17	7	24-25	143-149	44	
20	24	22	17	40-41	8	63-65	73-76	15-16	—	22-23	136-142	43	
	21	21	16	38-39	7	60-62	70-72	14	6	21	129-135	42	
	18	20	14-15	36-37	6	58-59	66-69	13	—	19-20	122-128	41	3
	16	19	13	34-35	—	55-57	63-65	12	—	17-18	115-121	40	
10	14	18	12	32-33	5	52-54	59-62	11	—	16	108-114	39	
	12	17	11	30-31	4	49-51	56-58	10	5	15	101-107	38	
	10	16	10	28-29	—	46-48	52-55	9	—	13-14	94-100	37	
	8	15	9	26-27	3	44-45	49-51	8	—	11-12	87-93	36	2
5	7	14	8	24-25	—	41-43	46-48	7	4	10	80-86	35	
	5	13	7	22-23	—	38-40	42-45	6	—	8-9	73-79	34	
	4	12	6	20-21	2	35-37	39-41	5	—	7	66-72	33	
	4	—	5	18-19	—	32-34	35-38	4	3	6	59-65	32	
	3	11	4	16-17	—	29-31	32-34	—	—	5	52-58	31	
2	2	10	3	14-15	—	27-28	28-31	3	—	4	45-51	30	1
	2	9	2	12-13	1	24-26	25-27	2	2	3	38-44	29	
1	1	8	1	10-11	—	21-23	22-24	—	—	2	31-37	28	
	1	1-7	—	1-9	—	1-20	1-21	1	1	1	1-30	27	

TABLE 24*
PERCENTILE RANKS — STANDARD SCORES — STANINES
1963 NORMS — HIGH 3

%-ile INTERVAL	%-ile RANK	RAW SCORE										STANDARD SCORE	STANINE
		RV	RC	TR	AR	AF	TA	ME	SP	TL	TB		
99	99	45	54-55	98-100	38-40	150	190	—	25	82-85	354-375	73	9
	99	44	53	97	37	149	187-189	60	24	80-81	350-353	72	
98	98	—	52	96	36	148	185-186	59	23	79	345-349	71	
	98	—	51	94-95	35	146-147	182-184	58	—	77-78	341-344	70	
95	97	43	50	93	34	145	180-181	57	22	76	337-340	69	8
	96	—	49	92	—	143-144	177-179	56	21	74-75	332-336	68	
	96	—	48	91	33	141-142	174-176	55	—	73	328-331	67	
	95	—	47	89-90	32	140	172-173	54	20	71-72	323-327	66	
	93	—	—	88	—	138-139	169-171	53	—	70	319-322	65	
90	92	42	46	87	31	136-137	167-168	52	19	68-69	315-318	64	7
	90	—	45	86	30	134-135	164-166	51	—	67	310-314	63	
	88	—	—	85	—	132-133	161-163	49-50	18	65-66	306-309	62	
	86	41	44	84	29	130-131	159-160	48	—	64	301-305	61	
80	84	—	43	83	28	129	156-158	47	—	62-63	297-300	60	6
	82	40	—	82	—	127-128	154-155	46	17	61	292-296	59	
	79	—	42	81	27	125-126	151-153	45	—	59-60	288-291	58	
	76	—	41	80	26	123-124	148-150	43-44	16	58	284-287	57	
70	73	39	—	78-79	25	121-122	146-147	42	—	56-57	279-283	56	5
	69	—	40	77	—	119-120	143-145	41	15	55	275-278	55	
	66	38	39	76	24	118	141-142	39-40	—	53-54	270-274	54	
60	62	—	—	75	23	116-117	138-140	38	—	52	266-269	53	4
	58	—	38	74	—	114-115	135-137	37	14	50-51	262-265	52	
50	54	37	37	73	22	112-113	133-134	35-36	—	49	257-261	51	
	50	—	—	72	21	110-111	130-132	34	13	47-48	253-256	50	
	46	36	36	70-71	20	107-109	127-129	32-33	—	46	249-252	49	
40	42	35	35	69	19	104-106	124-126	31	12	44-45	244-248	48	3
	38	34	34	68	18	101-103	121-123	30	—	42-43	238-243	47	
30	34	33	33	66-67	17	98-100	118-120	28-29	—	40-41	229-237	46	
	31	32	32	65	16	95-97	114-117	27	11	38-39	220-228	45	
	27	31	31	63-64	15	92-94	111-113	26	—	36-37	210-219	44	
20	24	30	29-30	61-62	14	89-91	107-110	24-25	10	34-35	201-209	43	2
	21	29	28	59-60	13	86-88	103-106	23	—	31-33	192-200	42	
	18	28	27	57-58	12	83-85	98-102	22	9	29-30	182-191	41	
	16	27	25-26	55-56	11	80-82	93-97	20-21	—	27-28	173-181	40	
10	14	26	24	52-54	10	77-79	88-92	19	8	25-26	163-172	39	1
	12	25	22-23	50-51	9	74-76	84-87	18	—	23-24	154-162	38	
	10	23-24	20-21	47-49	8	70-73	79-83	16-17	—	21-22	145-153	37	
	8	22	18-19	44-46	7	67-69	75-78	15	7	19-20	135-144	36	
5	7	21	16-17	40-43	—	63-66	70-74	14	—	17-18	126-134	35	
	5	20	14-15	37-39	6	59-62	66-69	12-13	6	15-16	116-125	34	
	4	18-19	13	33-36	5	55-58	62-65	11	—	14	107-115	33	
	4	17	11-12	30-32	4	51-54	57-61	9-10	5	12-13	98-106	32	
	3	15-16	9-10	26-29	—	47-50	53-56	8	—	11	88-97	31	
2	2	14	8	23-25	3	43-46	48-52	7	—	9-10	79-87	30	
	2	13	7	19-22	—	39-42	43-47	5-6	4	8	69-78	29	
1	1	12	5-6	16-18	2	35-38	38-42	4	—	6-7	60-68	28	
	1	1-11	1-4	1-15	1	1-34	1-37	1-3	1-3	1-5	1-59	27	

*Tables 24 and 25 modified February 1965. Grade placement and all other tables for CAT-UP remain the same.

TABLE 25*
PERCENTILE RANKS — STANDARD SCORES — STANINES
1963 NORMS — LOW 4

%-ile INTERVAL	%-ile RANK	RAW SCORE										STANDARD SCORE	STANINE
		RV	RC	TR	AR	AF	TA	ME	SP	TL	TB		
99	99	—	—	—	—	—	—	—	25	—	—	73	9
	99	—	55	100	40	—	—	—	—	85	375	72	
98	98	—	—	—	—	150	190	—	24	—	374	71	
	98	—	54	99	39	—	189	60	—	84	373	70	
95	97	45	—	—	—	149	188	—	—	—	372	69	
	96	—	—	98	38	148	187	59	23	83	368-371	68	
	96	—	53	97	—	147	186	—	—	—	364-367	67	8
	95	—	—	—	37	146	185	58	22	82	362-363	66	
	93	—	—	96	—	145	184	—	—	81	359-361	65	
90	92	—	52	—	36	144	182-183	—	21	—	356-358	64	
	90	44	—	95	—	143	181	57	—	80	352-355	63	
	88	—	—	—	35	142	179-180	—	20	79	349-351	62	
	86	—	51	94	—	141	178	56	—	78	346-348	61	7
80	84	—	—	—	34	140	176-177	—	—	77	342-345	60	
	82	—	50	93	—	138-139	174-175	55	19	75-76	338-341	59	
	79	43	—	92	33	136-137	172-173	—	—	74	333-337	58	
	76	—	49	91	—	134-135	170-171	54	18	73	329-332	57	
70	73	—	—	90	32	133	167-169	—	—	72	324-328	56	6
	69	—	48	89	31	131-132	164-166	53	17	70-71	320-323	55	
	66	42	47	88	—	129-130	162-163	—	—	69	315-319	54	
60	62	—	—	87	30	127-128	159-161	52	—	68	311-314	53	
	58	—	46	86	—	125-126	157-158	51	16	66-67	307-310	52	
50	54	41	45	85	29	123-124	154-156	50	—	65	302-306	51	5
	50	—	—	83-84	28	122	151-153	49	15	63-64	298-301	50	
	46	40	44	82	27	119-121	148-150	48	—	62	294-297	49	
40	42	39	43	80-81	26	117-118	145-147	46-47	14	60-61	290-293	48	
	38	38	42	79	25	115-116	141-144	45	—	59	284-289	47	
30	34	—	41	78	24	112-114	138-140	44	—	57-58	278-283	46	4
	31	37	40	76-77	23	110-111	134-137	42-43	13	55-56	272-277	45	
	27	36	39	74-75	22	108-109	131-133	41	—	53-54	265-271	44	
20	24	35	38	73	21	105-107	127-130	39-40	12	51-52	259-264	43	
	21	34	37	71-72	20	103-104	123-126	37-38	—	49-50	252-258	42	
	18	33	36	69-70	19	100-102	119-122	35-36	11	46-48	243-251	41	3
	16	32	34-35	67-68	18	97-99	114-118	32-34	—	44-45	233-242	40	
10	14	31	33	64-66	17	94-96	110-113	30-31	10	41-43	223-232	39	
	12	30	31-32	61-63	16	92-93	105-109	27-29	—	39-40	212-222	38	
	10	29	29-30	59-60	15	89-91	100-104	24-26	—	36-38	201-211	37	
	8	27-28	27-28	57-58	14	86-88	95-99	22-23	9	33-35	190-200	36	2
5	7	26	25-26	54-56	13	83-85	90-94	20-21	—	30-32	179-189	35	
	5	24-25	22-24	50-53	12	79-82	85-89	18-19	8	27-29	168-178	34	
	4	23	19-21	46-49	10-11	74-78	80-84	16-17	—	24-26	157-167	33	
	4	21-22	17-18	42-45	9	69-73	75-79	14-15	7	22-23	147-156	32	
	3	20	15-16	36-41	8	64-68	70-74	13	—	19-21	136-146	31	
2	2	18-19	13-14	33-35	7	59-63	65-69	11-12	—	17-18	125-135	30	1
	2	17	11-12	29-32	6	54-58	59-64	10	6	15-16	114-124	29	
1	1	16	10	26-28	5	48-53	53-58	9	—	13-14	103-113	28	
	1	1-15	1-9	1-25	1-4	1-47	1-52	1-8	1-5	1-12	1-102	27	

*Tables 24 and 25 modified February 1965. Grade placement and all other tables for CAT-UP remain the same.

TABLE 26

ANTICIPATED ACHIEVEMENT GRADE PLACEMENTS FOR GRADE 2

INTELLECTUAL STATUS INDEX	GRADES 2.0 - 2.1										GRADES 2.2 - 2.3 - 2.4										INTELLECTUAL STATUS INDEX
	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB	
140	3.6	3.5	3.5	3.5	3.7	3.3	3.7	4.1	3.6	3.4	3.8	3.7	3.7	3.7	3.9	3.5	3.9	4.3	3.8	3.6	140
139	3.6	3.4	3.5	3.5	3.7	3.2	3.6	4.0	3.5	3.4	3.8	3.6	3.7	3.7	3.9	3.4	3.8	4.2	3.7	3.6	139
138	3.6	3.4	3.5	3.5	3.7	3.2	3.6	4.0	3.5	3.4	3.8	3.6	3.7	3.7	3.9	3.4	3.8	4.2	3.7	3.6	138
137	3.5	3.4	3.4	3.4	3.6	3.2	3.5	3.9	3.5	3.3	3.7	3.6	3.6	3.6	3.8	3.4	3.7	4.1	3.7	3.5	137
136	3.5	3.3	3.4	3.4	3.6	3.1	3.5	3.9	3.4	3.3	3.7	3.5	3.6	3.6	3.8	3.3	3.7	4.1	3.6	3.5	136
135	3.4	3.3	3.3	3.3	3.5	3.1	3.5	3.8	3.4	3.3	3.6	3.5	3.5	3.5	3.7	3.3	3.7	4.0	3.6	3.5	135
134	3.4	3.3	3.3	3.3	3.5	3.1	3.4	3.8	3.3	3.2	3.6	3.5	3.5	3.5	3.7	3.3	3.6	4.0	3.5	3.4	134
133	3.4	3.2	3.3	3.3	3.4	3.1	3.4	3.7	3.3	3.2	3.6	3.4	3.5	3.5	3.6	3.3	3.6	3.9	3.5	3.4	133
132	3.3	3.2	3.2	3.2	3.4	3.0	3.4	3.7	3.3	3.2	3.5	3.4	3.4	3.4	3.6	3.2	3.6	3.9	3.5	3.4	132
131	3.3	3.2	3.2	3.2	3.4	3.0	3.3	3.6	3.2	3.1	3.5	3.4	3.4	3.4	3.6	3.2	3.5	3.8	3.4	3.3	131
130	3.2	3.1	3.2	3.2	3.3	3.0	3.3	3.6	3.2	3.1	3.4	3.3	3.4	3.4	3.5	3.2	3.5	3.8	3.4	3.3	130
129	3.2	3.1	3.1	3.1	3.3	2.9	3.2	3.5	3.2	3.1	3.4	3.3	3.3	3.3	3.5	3.1	3.4	3.7	3.4	3.3	129
128	3.2	3.1	3.1	3.1	3.2	2.9	3.2	3.5	3.1	3.0	3.4	3.3	3.3	3.3	3.4	3.1	3.4	3.7	3.3	3.2	128
127	3.1	3.0	3.1	3.1	3.2	2.9	3.2	3.4	3.1	3.0	3.3	3.2	3.3	3.3	3.4	3.1	3.4	3.6	3.3	3.2	127
126	3.1	3.0	3.0	3.0	3.2	2.9	3.1	3.4	3.0	3.0	3.3	3.2	3.2	3.2	3.4	3.1	3.3	3.6	3.2	3.2	126
125	3.1	3.0	3.0	3.0	3.1	2.8	3.1	3.3	3.0	2.9	3.3	3.2	3.2	3.2	3.3	3.0	3.3	3.5	3.2	3.1	125
124	3.0	2.9	3.0	3.0	3.1	2.8	3.0	3.3	3.0	2.9	3.2	3.1	3.2	3.2	3.3	3.0	3.2	3.5	3.2	3.1	124
123	3.0	2.9	2.9	2.9	3.0	2.8	3.0	3.2	2.9	2.9	3.2	3.1	3.1	3.1	3.2	3.0	3.2	3.4	3.1	3.1	123
122	2.9	2.8	2.9	2.9	3.0	2.7	3.0	3.2	2.9	2.8	3.1	3.0	3.1	3.1	3.2	2.9	3.2	3.4	3.1	3.0	122
121	2.9	2.8	2.8	2.8	3.0	2.7	2.9	3.1	2.9	2.8	3.1	3.0	3.0	3.0	3.2	2.9	3.1	3.3	3.1	3.0	121
120	2.9	2.8	2.8	2.8	2.9	2.7	2.9	3.1	2.8	2.8	3.1	3.0	3.0	3.0	3.1	2.9	3.1	3.3	3.0	3.0	120
119	2.8	2.7	2.8	2.8	2.9	2.6	2.8	3.0	2.8	2.7	3.0	2.9	3.0	3.0	3.1	2.8	3.0	3.2	3.0	2.9	119
118	2.8	2.7	2.7	2.7	2.8	2.6	2.8	3.0	2.8	2.7	3.0	2.9	2.9	2.9	3.0	2.8	3.0	3.2	3.0	2.9	118
117	2.7	2.7	2.7	2.7	2.8	2.6	2.8	2.9	2.7	2.7	2.9	2.9	2.9	2.9	3.0	2.8	3.0	3.1	2.9	2.9	117
116	2.7	2.6	2.7	2.7	2.8	2.6	2.7	2.9	2.7	2.6	2.9	2.8	2.9	2.9	3.0	2.8	2.9	3.1	2.9	2.8	116
115	2.7	2.6	2.6	2.6	2.7	2.5	2.7	2.8	2.6	2.6	2.9	2.8	2.8	2.8	2.9	2.7	2.9	3.0	2.8	2.8	115
114	2.6	2.6	2.6	2.6	2.7	2.5	2.6	2.8	2.6	2.6	2.8	2.8	2.8	2.8	2.9	2.7	2.8	3.0	2.8	2.8	114
113	2.6	2.5	2.6	2.6	2.6	2.5	2.6	2.7	2.6	2.5	2.8	2.7	2.8	2.8	2.8	2.7	2.8	2.9	2.8	2.7	113
112	2.6	2.5	2.5	2.5	2.6	2.4	2.6	2.7	2.5	2.5	2.8	2.7	2.7	2.7	2.8	2.6	2.8	2.9	2.7	2.7	112
111	2.5	2.5	2.5	2.5	2.5	2.4	2.5	2.6	2.5	2.5	2.7	2.7	2.7	2.7	2.7	2.6	2.7	2.8	2.7	2.7	111
110	2.5	2.4	2.5	2.5	2.5	2.4	2.5	2.6	2.5	2.4	2.7	2.6	2.7	2.7	2.7	2.6	2.7	2.8	2.7	2.6	110
109	2.4	2.4	2.4	2.4	2.5	2.4	2.5	2.5	2.4	2.4	2.6	2.6	2.6	2.6	2.7	2.6	2.7	2.7	2.6	2.6	109
108	2.4	2.4	2.4	2.4	2.4	2.3	2.4	2.5	2.4	2.4	2.6	2.6	2.6	2.6	2.6	2.5	2.6	2.7	2.6	2.6	108
107	2.4	2.3	2.3	2.3	2.4	2.3	2.4	2.4	2.4	2.3	2.6	2.5	2.5	2.5	2.6	2.5	2.6	2.6	2.6	2.5	107
106	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.5	2.5	106
105	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.5	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	105
104	2.3	2.2	2.2	2.2	2.3	2.2	2.3	2.3	2.2	2.2	2.5	2.4	2.4	2.4	2.5	2.4	2.5	2.5	2.4	2.4	104
103	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	103
102	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	102
101	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	101

INTELLECTUAL STATUS INDEX	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB
100	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
99	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
98	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
97	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
96	1.9	2.0	2.0	2.0	1.9	2.0	1.9	1.9	2.0	2.0
95	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9
94	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9
93	1.8	1.9	1.9	1.9	1.8	1.9	1.8	1.8	1.8	1.9
92	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.7	1.8	1.8
91	1.8	1.8	1.8	1.8	1.7	1.8	1.7	1.7	1.8	1.8
90	1.7	1.8	1.7	1.7	1.7	1.8	1.7	1.6	1.7	1.8
89	1.7	1.7	1.7	1.7	1.7	1.8	1.7	1.6	1.7	1.7
88	1.6	1.7	1.7	1.7	1.6	1.8	1.6	1.5	1.7	1.7
87	1.6	1.7	1.6	1.6	1.6	1.7	1.6	1.5	1.6	1.7
86	1.6	1.6	1.6	1.6	1.5	1.7	1.6	1.4	1.6	1.6
85	1.5	1.6	1.6	1.6	1.5	1.7	1.5	1.4	1.6	1.6
84	1.5	1.6	1.5	1.5	1.4	1.6	1.5	1.3	1.5	1.6
83	1.5	1.5	1.5	1.5	1.4	1.6	1.4	1.3	1.5	1.5
82	1.4	1.5	1.5	1.5	1.4	1.6	1.4	1.2	1.4	1.5
81	1.4	1.5	1.4	1.4	1.3	1.6	1.4	1.2	1.4	1.5
80	1.3	1.4	1.4	1.4	1.3	1.5	1.3	1.1	1.4	1.4
79	1.3	1.4	1.4	1.4	1.2	1.5	1.3	1.1	1.3	1.4
78	1.3	1.4	1.3	1.3	1.2	1.5	1.2	1.0	1.3	1.4
77	1.2	1.3	1.3	1.3	1.2	1.4	1.2	1.0	1.3	1.3
76	1.2	1.3	1.2	1.2	1.1	1.4	1.2	.9	1.2	1.3
75	1.1	1.3	1.2	1.2	1.1	1.4	1.1	.9	1.2	1.3
74	1.1	1.2	1.2	1.2	1.0	1.3	1.1	.8	1.2	1.2
73	1.1	1.2	1.1	1.1	1.0	1.3	1.0	.8	1.1	1.2
72	1.0	1.1	1.1	1.1	1.0	1.3	1.0	.7	1.1	1.2
71	1.0	1.1	1.1	1.1	.9	1.3	1.0	.7	1.0	1.1
70	1.0	1.1	1.0	1.0	.9	1.2	.9	.6	1.0	1.1
69	.9	1.0	1.0	1.0	.8	1.2	.9	.6	1.0	1.1
68	.9	1.0	1.0	1.0	.8	1.2	.8	.5	.9	1.0
67	.8	1.0	.9	.9	.8	1.1	.8	.5	.9	1.0
66	.8	.9	.9	.9	.7	1.1	.8	.4	.9	1.0
65	.8	.9	.9	.9	.7	1.1	.7	.4	.8	.9
64	.7	.9	.8	.8	.6	1.1	.7	.3	.8	.9
63	.7	.8	.8	.8	.6	1.0	.7	.3	.7	.9
62	.6	.8	.7	.7	.5	1.0	.6	.2	.7	.8
61	.6	.8	.7	.7	.5	1.0	.6	.2	.7	.8
60	.6	.7	.7	.7	.5	.9	.5	.1	.6	.8

GRADES 2.0 - 2.1

INTELLECTUAL STATUS INDEX	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB
100	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
99	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
98	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
97	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
96	2.1	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.2	2.2
95	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1
94	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1
93	2.0	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.1
92	2.0	2.0	2.0	2.0	2.0	2.1	2.0	1.9	2.0	2.0
91	2.0	2.0	2.0	2.0	1.9	2.0	1.9	1.9	2.0	2.0
90	1.9	2.0	1.9	1.9	1.9	2.0	1.9	1.8	1.9	2.0
89	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.8	1.9	1.9
88	1.8	1.9	1.9	1.9	1.8	2.0	1.8	1.7	1.9	1.9
87	1.8	1.9	1.8	1.8	1.8	1.9	1.8	1.7	1.8	1.9
86	1.8	1.8	1.8	1.8	1.7	1.9	1.8	1.6	1.8	1.8
85	1.7	1.8	1.8	1.8	1.7	1.9	1.7	1.6	1.8	1.8
84	1.7	1.8	1.7	1.7	1.6	1.8	1.7	1.5	1.7	1.8
83	1.7	1.7	1.7	1.7	1.6	1.8	1.6	1.5	1.7	1.7
82	1.6	1.7	1.7	1.7	1.6	1.8	1.6	1.4	1.6	1.7
81	1.6	1.7	1.6	1.6	1.5	1.8	1.6	1.4	1.6	1.7
80	1.5	1.6	1.6	1.6	1.5	1.7	1.5	1.3	1.6	1.6
79	1.5	1.6	1.6	1.6	1.4	1.7	1.5	1.3	1.5	1.6
78	1.5	1.6	1.5	1.5	1.4	1.7	1.4	1.2	1.5	1.6
77	1.4	1.5	1.5	1.5	1.4	1.6	1.4	1.2	1.5	1.5
76	1.4	1.5	1.4	1.4	1.3	1.6	1.4	1.1	1.4	1.5
75	1.3	1.5	1.4	1.4	1.3	1.6	1.3	1.1	1.4	1.5
74	1.3	1.4	1.4	1.4	1.2	1.5	1.3	1.0	1.4	1.4
73	1.3	1.4	1.3	1.3	1.2	1.5	1.2	1.0	1.3	1.4
72	1.2	1.3	1.3	1.3	1.2	1.5	1.2	.9	1.3	1.4
71	1.2	1.3	1.3	1.3	1.1	1.5	1.2	.9	1.2	1.3
70	1.2	1.3	1.2	1.2	1.1	1.4	1.1	.8	1.2	1.3
69	1.1	1.2	1.2	1.2	1.0	1.4	1.1	.8	1.2	1.3
68	1.1	1.2	1.2	1.2	1.0	1.4	1.0	.7	1.1	1.2
67	1.0	1.2	1.1	1.1	1.0	1.3	1.0	.7	1.1	1.2
66	1.0	1.1	1.1	1.1	.9	1.3	1.0	.6	1.1	1.2
65	1.0	1.1	1.1	1.1	.9	1.3	.9	.6	1.0	1.1
64	.9	1.1	1.0	1.0	.8	1.3	.9	.5	1.0	1.1
63	.9	1.0	1.0	1.0	.8	1.2	.9	.5	.9	1.1
62	.8	1.0	.9	.9	.7	1.2	.8	.4	.9	1.0
61	.8	1.0	.9	.9	.7	1.2	.8	.4	.9	1.0
60	.8	.9	.9	.9	.7	1.1	.7	.3	.8	1.0

GRADES 2.2 - 2.3 - 2.4

ANTICIPATED ACHIEVEMENT GRADE PLACEMENTS FOR GRADE 2

TABLE 27

ANTICIPATED ACHIEVEMENT GRADE PLACEMENTS FOR GRADE 2

INTELLECTUAL STATUS INDEX	GRADES 2.5 - 2.6 - 2.7										GRADES 2.8 - 2.9										INTELLECTUAL STATUS INDEX
	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB	
140	4.1	4.0	4.0	4.0	4.2	3.8	4.2	4.6	4.1	3.9	4.4	4.3	4.3	4.3	4.5	4.1	4.5	4.9	4.4	4.2	140
139	4.1	3.9	4.0	4.0	4.2	3.7	4.1	4.5	4.0	3.9	4.4	4.2	4.3	4.3	4.5	4.0	4.4	4.8	4.3	4.2	139
138	4.1	3.9	4.0	4.0	4.2	3.7	4.1	4.5	4.0	3.9	4.4	4.2	4.3	4.3	4.5	4.0	4.4	4.8	4.3	4.2	138
137	4.0	3.9	3.9	3.9	4.1	3.7	4.0	4.4	4.0	3.8	4.3	4.2	4.2	4.2	4.4	4.0	4.3	4.7	4.3	4.1	137
136	4.0	3.8	3.9	3.9	4.1	3.6	4.0	4.4	3.9	3.8	4.3	4.1	4.2	4.2	4.4	3.9	4.3	4.7	4.2	4.1	136
135	3.9	3.8	3.8	3.8	4.0	3.6	4.0	4.3	3.9	3.8	4.2	4.1	4.1	4.1	4.3	3.9	4.3	4.6	4.2	4.1	135
134	3.9	3.8	3.8	3.8	4.0	3.6	3.9	4.3	3.8	3.7	4.2	4.1	4.1	4.1	4.3	3.9	4.2	4.6	4.1	4.0	134
133	3.9	3.7	3.8	3.8	3.9	3.6	3.9	4.2	3.8	3.7	4.2	4.0	4.1	4.1	4.2	3.9	4.2	4.5	4.1	4.0	133
132	3.8	3.7	3.7	3.7	3.9	3.5	3.9	4.2	3.8	3.7	4.1	4.0	4.0	4.0	4.2	3.8	4.2	4.5	4.1	4.0	132
131	3.8	3.7	3.7	3.7	3.9	3.5	3.8	4.1	3.7	3.6	4.1	4.0	4.0	4.0	4.2	3.8	4.1	4.4	4.0	3.9	131
130	3.7	3.6	3.7	3.7	3.8	3.5	3.8	4.1	3.7	3.6	4.0	3.9	4.0	4.0	4.1	3.8	4.1	4.4	4.0	3.9	130
129	3.7	3.6	3.6	3.6	3.8	3.4	3.7	4.0	3.7	3.6	4.0	3.9	3.9	3.9	4.1	3.7	4.0	4.3	4.0	3.9	129
128	3.7	3.6	3.6	3.6	3.7	3.4	3.7	4.0	3.6	3.5	4.0	3.9	3.9	3.9	4.0	3.7	4.0	4.3	3.9	3.8	128
127	3.6	3.5	3.6	3.6	3.7	3.4	3.7	3.9	3.6	3.5	3.9	3.8	3.9	3.9	4.0	3.7	4.0	4.2	3.9	3.8	127
126	3.6	3.5	3.5	3.5	3.7	3.4	3.6	3.9	3.5	3.5	3.9	3.8	3.8	3.8	4.0	3.7	3.9	4.2	3.8	3.8	126
125	3.6	3.5	3.5	3.5	3.6	3.3	3.6	3.8	3.5	3.4	3.9	3.8	3.8	3.8	3.9	3.6	3.9	4.1	3.8	3.7	125
124	3.5	3.4	3.5	3.5	3.6	3.3	3.5	3.8	3.5	3.4	3.8	3.7	3.8	3.8	3.9	3.6	3.8	4.1	3.8	3.7	124
123	3.5	3.4	3.4	3.4	3.5	3.3	3.5	3.7	3.4	3.4	3.8	3.7	3.7	3.7	3.8	3.6	3.8	4.0	3.7	3.7	123
122	3.4	3.3	3.4	3.4	3.5	3.2	3.5	3.7	3.4	3.3	3.7	3.6	3.7	3.7	3.8	3.5	3.8	4.0	3.7	3.6	122
121	3.4	3.3	3.3	3.3	3.5	3.2	3.4	3.6	3.4	3.3	3.7	3.6	3.6	3.6	3.8	3.5	3.7	3.9	3.7	3.6	121
120	3.4	3.3	3.3	3.3	3.4	3.2	3.4	3.6	3.3	3.3	3.7	3.6	3.6	3.6	3.7	3.5	3.7	3.9	3.6	3.6	120
119	3.3	3.2	3.3	3.3	3.4	3.1	3.3	3.5	3.3	3.2	3.6	3.5	3.6	3.6	3.7	3.4	3.6	3.8	3.6	3.5	119
118	3.3	3.2	3.2	3.2	3.3	3.1	3.3	3.5	3.3	3.2	3.6	3.5	3.5	3.5	3.6	3.4	3.6	3.8	3.6	3.5	118
117	3.2	3.2	3.2	3.2	3.3	3.1	3.3	3.4	3.2	3.2	3.5	3.5	3.5	3.5	3.6	3.4	3.6	3.7	3.5	3.5	117
116	3.2	3.1	3.2	3.2	3.3	3.1	3.2	3.4	3.2	3.1	3.5	3.4	3.5	3.5	3.6	3.4	3.5	3.7	3.5	3.4	116
115	3.2	3.1	3.1	3.1	3.2	3.0	3.2	3.3	3.1	3.1	3.5	3.4	3.4	3.4	3.5	3.3	3.5	3.6	3.4	3.4	115
114	3.1	3.1	3.1	3.1	3.2	3.0	3.1	3.3	3.1	3.1	3.4	3.4	3.4	3.4	3.5	3.3	3.4	3.6	3.4	3.4	114
113	3.1	3.0	3.1	3.1	3.1	3.0	3.1	3.2	3.1	3.0	3.4	3.3	3.4	3.4	3.4	3.3	3.4	3.5	3.4	3.3	113
112	3.1	3.0	3.0	3.0	3.1	2.9	3.1	3.2	3.0	3.0	3.4	3.3	3.3	3.3	3.4	3.2	3.4	3.5	3.3	3.3	112
111	3.0	3.0	3.0	3.0	3.0	2.9	3.0	3.1	3.0	3.0	3.3	3.3	3.3	3.3	3.3	3.2	3.3	3.4	3.3	3.3	111
110	3.0	2.9	3.0	3.0	3.0	2.9	3.0	3.1	3.0	2.9	3.3	3.2	3.3	3.3	3.3	3.2	3.3	3.4	3.3	3.2	110
109	2.9	2.9	2.9	2.9	3.0	2.9	3.0	3.0	2.9	2.9	3.2	3.2	3.2	3.2	3.3	3.2	3.3	3.3	3.2	3.2	109
108	2.9	2.9	2.9	2.9	2.9	2.8	2.9	3.0	2.9	2.9	3.2	3.2	3.2	3.2	3.2	3.1	3.2	3.3	3.2	3.2	108
107	2.9	2.8	2.8	2.8	2.9	2.8	2.9	2.9	2.9	2.8	3.2	3.1	3.1	3.1	3.2	3.1	3.2	3.2	3.2	3.1	107
106	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.9	2.8	2.8	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.2	3.1	3.1	106
105	2.8	2.8	2.8	2.8	2.8	2.7	2.8	2.8	2.8	2.8	3.1	3.1	3.1	3.1	3.1	3.0	3.1	3.1	3.1	3.1	105
104	2.8	2.7	2.7	2.7	2.8	2.7	2.8	2.8	2.7	2.7	3.1	3.0	3.0	3.0	3.1	3.0	3.1	3.1	3.0	3.0	104
103	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	103
102	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	102
101	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	101

INTELLECTUAL STATUS INDEX	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB	INTELLECTUAL STATUS INDEX
	GRADES 2.5 - 2.6 - 2.7										GRADES 2.8 - 2.9										
100	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	100
99	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	99
98	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	98
97	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	97
96	2.4	2.5	2.5	2.5	2.4	2.5	2.4	2.4	2.5	2.5	2.7	2.8	2.8	2.8	2.7	2.8	2.7	2.7	2.8	2.8	96
95	2.4	2.4	2.4	2.4	2.4	2.5	2.4	2.4	2.4	2.4	2.7	2.7	2.7	2.7	2.7	2.8	2.7	2.7	2.7	2.7	95
94	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.4	2.4	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.7	2.7	94
93	2.3	2.4	2.4	2.4	2.3	2.4	2.3	2.3	2.3	2.4	2.6	2.7	2.7	2.7	2.6	2.7	2.6	2.6	2.6	2.7	93
92	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.2	2.3	2.3	2.6	2.6	2.6	2.6	2.6	2.7	2.6	2.5	2.6	2.6	92
91	2.3	2.3	2.3	2.3	2.2	2.3	2.2	2.2	2.3	2.3	2.6	2.6	2.6	2.6	2.5	2.6	2.5	2.5	2.6	2.6	91
90	2.2	2.3	2.2	2.2	2.2	2.3	2.2	2.1	2.2	2.3	2.5	2.6	2.5	2.5	2.5	2.6	2.5	2.4	2.5	2.6	90
89	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.1	2.2	2.2	2.5	2.5	2.5	2.5	2.5	2.6	2.5	2.4	2.5	2.5	89
88	2.1	2.2	2.2	2.2	2.1	2.3	2.1	2.0	2.2	2.2	2.4	2.5	2.5	2.5	2.4	2.6	2.4	2.3	2.5	2.5	88
87	2.1	2.2	2.1	2.1	2.1	2.2	2.1	2.0	2.1	2.2	2.4	2.5	2.4	2.4	2.4	2.5	2.4	2.3	2.4	2.5	87
86	2.1	2.1	2.1	2.1	2.0	2.2	2.1	1.9	2.1	2.1	2.4	2.4	2.4	2.4	2.3	2.5	2.4	2.2	2.4	2.4	86
85	2.0	2.1	2.1	2.1	2.0	2.2	2.0	1.9	2.1	2.1	2.3	2.4	2.4	2.4	2.3	2.5	2.3	2.2	2.4	2.4	85
84	2.0	2.1	2.0	2.0	1.9	2.1	2.0	1.8	2.0	2.1	2.3	2.4	2.3	2.3	2.2	2.4	2.3	2.1	2.3	2.4	84
83	2.0	2.0	2.0	2.0	1.9	2.1	1.9	1.8	2.0	2.0	2.3	2.3	2.3	2.3	2.2	2.4	2.2	2.1	2.3	2.3	83
82	1.9	2.0	2.0	2.0	1.9	2.1	1.9	1.7	1.9	2.0	2.2	2.3	2.3	2.3	2.2	2.4	2.2	2.0	2.2	2.3	82
81	1.9	2.0	1.9	1.9	1.8	2.1	1.9	1.7	1.9	2.0	2.2	2.3	2.2	2.2	2.1	2.4	2.2	2.0	2.2	2.3	81
80	1.8	1.9	1.9	1.9	1.8	2.0	1.8	1.6	1.9	1.9	2.1	2.2	2.2	2.2	2.1	2.3	2.1	1.9	2.2	2.2	80
79	1.8	1.9	1.9	1.9	1.7	2.0	1.8	1.6	1.8	1.9	2.1	2.2	2.2	2.2	2.0	2.3	2.1	1.9	2.1	2.2	79
78	1.8	1.9	1.8	1.8	1.7	2.0	1.7	1.5	1.8	1.9	2.1	2.2	2.1	2.1	2.0	2.3	2.0	1.8	2.1	2.2	78
77	1.7	1.8	1.8	1.8	1.7	1.9	1.7	1.5	1.8	1.8	2.0	2.1	2.1	2.1	2.0	2.2	2.0	1.8	2.1	2.1	77
76	1.7	1.8	1.7	1.7	1.6	1.9	1.7	1.4	1.7	1.8	2.0	2.1	2.0	2.0	1.9	2.2	2.0	1.7	2.0	2.1	76
75	1.6	1.8	1.7	1.7	1.6	1.9	1.6	1.4	1.7	1.8	1.9	2.1	2.0	2.0	1.9	2.2	1.9	1.7	2.0	2.1	75
74	1.6	1.7	1.7	1.7	1.5	1.8	1.6	1.3	1.7	1.7	1.9	2.0	2.0	2.0	1.8	2.1	1.9	1.6	2.0	2.0	74
73	1.6	1.7	1.6	1.6	1.5	1.8	1.5	1.3	1.6	1.7	1.9	2.0	1.9	1.9	1.8	2.1	1.8	1.6	1.9	2.0	73
72	1.5	1.6	1.6	1.6	1.5	1.8	1.5	1.2	1.6	1.7	1.8	1.9	1.9	1.9	1.8	2.1	1.8	1.5	1.9	2.0	72
71	1.5	1.6	1.6	1.6	1.4	1.8	1.5	1.2	1.5	1.6	1.8	1.9	1.9	1.9	1.7	2.1	1.8	1.5	1.8	1.9	71
70	1.5	1.6	1.5	1.5	1.4	1.7	1.4	1.1	1.5	1.6	1.8	1.9	1.8	1.8	1.7	2.0	1.7	1.4	1.8	1.9	70
69	1.4	1.5	1.5	1.5	1.3	1.7	1.4	1.1	1.5	1.6	1.7	1.8	1.8	1.8	1.6	2.0	1.7	1.4	1.8	1.9	69
68	1.4	1.5	1.5	1.5	1.3	1.7	1.3	1.0	1.4	1.5	1.7	1.8	1.8	1.8	1.6	2.0	1.6	1.3	1.7	1.8	68
67	1.3	1.5	1.4	1.4	1.3	1.6	1.3	1.0	1.4	1.5	1.6	1.8	1.7	1.7	1.6	1.9	1.6	1.3	1.7	1.8	67
66	1.3	1.4	1.4	1.4	1.2	1.6	1.3	.9	1.4	1.5	1.6	1.7	1.7	1.7	1.5	1.9	1.6	1.2	1.7	1.8	66
65	1.3	1.4	1.4	1.4	1.2	1.6	1.2	.9	1.3	1.4	1.6	1.7	1.7	1.7	1.5	1.9	1.5	1.2	1.6	1.7	65
64	1.2	1.4	1.3	1.3	1.1	1.6	1.2	.8	1.3	1.4	1.5	1.7	1.6	1.6	1.4	1.9	1.5	1.1	1.6	1.7	64
63	1.2	1.3	1.3	1.3	1.1	1.5	1.2	.8	1.2	1.4	1.5	1.6	1.6	1.6	1.4	1.8	1.5	1.1	1.5	1.7	63
62	1.1	1.3	1.2	1.2	1.0	1.5	1.1	.7	1.2	1.3	1.4	1.6	1.5	1.5	1.3	1.8	1.4	1.0	1.5	1.6	62
61	1.1	1.3	1.2	1.2	1.0	1.5	1.1	.7	1.2	1.3	1.4	1.6	1.5	1.5	1.3	1.8	1.4	1.0	1.5	1.6	61
60	1.1	1.2	1.2	1.2	1.0	1.4	1.0	.6	1.1	1.3	1.4	1.5	1.5	1.5	1.3	1.7	1.3	.9	1.4	1.6	60

ANTICIPATED ACHIEVEMENT GRADE PLACEMENTS FOR GRADE 2

TABLE 28

ANTICIPATED ACHIEVEMENT GRADE PLACEMENTS FOR GRADE 3

INTELLECTUAL STATUS INDEX	GRADES 3.0 - 3.1										GRADES 3.2 - 3.3 - 3.4										INTELLECTUAL STATUS INDEX
	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB	
140	4.0	3.9	3.9	3.9	3.8	3.8	3.9	3.8	3.9	3.9	4.2	4.1	4.1	4.1	4.0	4.0	4.1	4.0	4.1	4.1	140
139	4.0	3.9	3.9	3.9	3.8	3.8	3.9	3.8	3.9	3.9	4.2	4.1	4.1	4.1	4.0	4.0	4.1	4.0	4.1	4.1	139
138	4.0	3.9	3.9	3.9	3.8	3.7	3.9	3.8	3.9	3.8	4.2	4.1	4.1	4.1	4.0	3.9	4.1	4.0	4.1	4.0	138
137	3.9	3.8	3.8	3.8	3.8	3.7	3.8	3.8	3.9	3.8	4.1	4.0	4.0	4.0	4.0	3.9	4.0	4.0	4.1	4.0	137
136	3.9	3.8	3.8	3.8	3.8	3.7	3.8	3.7	3.8	3.8	4.1	4.0	4.0	4.0	4.0	3.9	4.0	3.9	4.0	4.0	136
135	3.9	3.8	3.8	3.8	3.7	3.7	3.8	3.7	3.8	3.8	4.1	4.0	4.0	4.0	3.9	3.9	4.0	3.9	4.0	4.0	135
134	3.9	3.8	3.8	3.8	3.7	3.7	3.8	3.7	3.8	3.8	4.1	4.0	4.0	4.0	3.9	3.9	4.0	3.9	4.0	4.0	134
133	3.8	3.8	3.8	3.8	3.7	3.7	3.8	3.7	3.8	3.7	4.0	4.0	4.0	4.0	3.9	3.9	4.0	3.9	4.0	3.9	133
132	3.8	3.7	3.7	3.7	3.7	3.6	3.7	3.7	3.8	3.7	4.0	3.9	3.9	3.9	3.9	3.8	3.9	3.9	4.0	3.9	132
131	3.8	3.7	3.7	3.7	3.7	3.6	3.7	3.7	3.7	3.7	4.0	3.9	3.9	3.9	3.9	3.8	3.9	3.9	3.9	3.9	131
130	3.8	3.7	3.7	3.7	3.7	3.6	3.7	3.6	3.7	3.7	4.0	3.9	3.9	3.9	3.9	3.8	3.9	3.8	3.9	3.9	130
129	3.8	3.7	3.7	3.7	3.6	3.6	3.7	3.6	3.7	3.7	4.0	3.9	3.9	3.9	3.8	3.8	3.9	3.8	3.9	3.9	129
128	3.7	3.7	3.7	3.7	3.6	3.6	3.7	3.6	3.7	3.6	3.9	3.9	3.9	3.9	3.8	3.8	3.9	3.8	3.9	3.8	128
127	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.7	3.6	3.9	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.9	3.8	127
126	3.7	3.6	3.6	3.6	3.6	3.5	3.6	3.6	3.6	3.6	3.9	3.8	3.8	3.8	3.8	3.7	3.8	3.8	3.8	3.8	126
125	3.7	3.6	3.6	3.6	3.6	3.5	3.6	3.6	3.6	3.6	3.9	3.8	3.8	3.8	3.8	3.7	3.8	3.8	3.8	3.8	125
124	3.6	3.6	3.6	3.6	3.5	3.5	3.6	3.5	3.6	3.6	3.8	3.8	3.8	3.8	3.7	3.7	3.8	3.7	3.8	3.8	124
123	3.6	3.6	3.6	3.6	3.5	3.5	3.6	3.5	3.6	3.5	3.8	3.8	3.8	3.8	3.7	3.7	3.8	3.7	3.8	3.7	123
122	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.6	3.5	3.8	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.8	3.7	122
121	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.8	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	121
120	3.6	3.5	3.5	3.5	3.5	3.4	3.5	3.5	3.5	3.5	3.8	3.7	3.7	3.7	3.7	3.6	3.7	3.7	3.7	3.7	120
119	3.5	3.5	3.5	3.5	3.5	3.4	3.5	3.4	3.5	3.5	3.7	3.7	3.7	3.7	3.7	3.6	3.7	3.6	3.7	3.7	119
118	3.5	3.5	3.5	3.5	3.4	3.4	3.5	3.4	3.5	3.4	3.7	3.7	3.7	3.7	3.6	3.6	3.7	3.6	3.7	3.6	118
117	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.4	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.7	3.6	117
116	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	116
115	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	115
114	3.4	3.4	3.4	3.4	3.4	3.3	3.4	3.4	3.4	3.4	3.6	3.6	3.6	3.6	3.6	3.5	3.6	3.6	3.6	3.6	114
113	3.4	3.4	3.4	3.4	3.3	3.3	3.4	3.3	3.4	3.4	3.6	3.6	3.6	3.6	3.5	3.5	3.6	3.5	3.6	3.6	113
112	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	112
111	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	111
110	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	110
109	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	109
108	3.3	3.3	3.3	3.3	3.2	3.2	3.3	3.2	3.3	3.3	3.5	3.5	3.5	3.5	3.4	3.4	3.5	3.4	3.5	3.5	108
107	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	107
106	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	106
105	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	105
104	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	104
103	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	103
102	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	102
101	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	101

INTELLECTUAL STATUS INDEX	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB	INTELLECTUAL STATUS INDEX
	GRADES 3.0 - 3.1										GRADES 3.2 - 3.3 - 3.4										
100	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	100
99	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	99
98	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	98
97	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	97
96	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	96
95	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	95
94	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	94
93	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	93
92	2.9	2.9	2.9	2.9	3.0	3.0	2.9	3.0	2.9	2.9	3.1	3.1	3.1	3.1	3.2	3.2	3.1	3.2	3.1	3.1	92
91	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	91
90	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	90
89	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	89
88	2.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	88
87	2.8	2.8	2.8	2.8	2.9	2.9	2.8	2.9	2.8	2.8	3.0	3.0	3.0	3.0	3.1	3.1	3.0	3.1	3.0	3.0	87
86	2.8	2.8	2.8	2.8	2.8	2.9	2.8	2.8	2.8	2.8	3.0	3.0	3.0	3.0	3.0	3.1	3.0	3.0	3.0	3.0	86
85	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	85
84	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	84
83	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.8	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	3.0	83
82	2.7	2.7	2.7	2.7	2.8	2.8	2.7	2.8	2.7	2.8	2.9	2.9	2.9	2.9	3.0	3.0	2.9	3.0	2.9	3.0	82
81	2.7	2.7	2.7	2.7	2.7	2.8	2.7	2.8	2.7	2.7	2.9	2.9	2.9	2.9	2.9	3.0	2.9	3.0	2.9	2.9	81
80	2.7	2.7	2.7	2.7	2.7	2.8	2.7	2.7	2.7	2.7	2.9	2.9	2.9	2.9	2.9	3.0	2.9	2.9	2.9	2.9	80
79	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	79
78	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.7	2.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.9	78
77	2.6	2.6	2.6	2.6	2.7	2.7	2.6	2.7	2.6	2.7	2.8	2.8	2.8	2.8	2.9	2.9	2.8	2.9	2.8	2.9	77
76	2.6	2.6	2.6	2.6	2.7	2.7	2.6	2.7	2.6	2.6	2.8	2.8	2.8	2.8	2.9	2.9	2.8	2.9	2.8	2.8	76
75	2.5	2.6	2.6	2.6	2.6	2.7	2.6	2.7	2.6	2.6	2.7	2.8	2.8	2.8	2.8	2.9	2.8	2.9	2.8	2.8	75
74	2.5	2.6	2.6	2.6	2.6	2.7	2.6	2.6	2.6	2.6	2.7	2.8	2.8	2.8	2.8	2.9	2.8	2.8	2.8	2.8	74
73	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.6	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.8	73
72	2.5	2.5	2.5	2.5	2.6	2.6	2.5	2.6	2.5	2.6	2.7	2.7	2.7	2.7	2.8	2.8	2.7	2.8	2.7	2.8	72
71	2.4	2.5	2.5	2.5	2.6	2.6	2.5	2.6	2.5	2.5	2.6	2.7	2.7	2.7	2.8	2.8	2.7	2.8	2.7	2.7	71
70	2.4	2.5	2.5	2.5	2.5	2.6	2.5	2.6	2.5	2.5	2.6	2.7	2.7	2.7	2.7	2.8	2.7	2.8	2.7	2.7	70
69	2.4	2.5	2.5	2.5	2.5	2.6	2.5	2.5	2.5	2.5	2.6	2.7	2.7	2.7	2.7	2.8	2.7	2.7	2.7	2.7	69
68	2.4	2.5	2.5	2.5	2.5	2.6	2.5	2.5	2.4	2.5	2.6	2.7	2.7	2.7	2.7	2.8	2.7	2.7	2.6	2.7	68
67	2.4	2.4	2.4	2.4	2.5	2.5	2.4	2.5	2.4	2.5	2.6	2.6	2.6	2.6	2.7	2.7	2.6	2.7	2.6	2.7	67
66	2.3	2.4	2.4	2.4	2.5	2.5	2.4	2.5	2.4	2.4	2.5	2.6	2.6	2.6	2.7	2.7	2.6	2.7	2.6	2.6	66
65	2.3	2.4	2.4	2.4	2.5	2.5	2.4	2.5	2.4	2.4	2.5	2.6	2.6	2.6	2.7	2.7	2.6	2.7	2.6	2.6	65
64	2.3	2.4	2.4	2.4	2.4	2.5	2.4	2.5	2.4	2.4	2.5	2.6	2.6	2.6	2.6	2.7	2.6	2.7	2.6	2.6	64
63	2.3	2.4	2.4	2.4	2.4	2.5	2.4	2.4	2.3	2.4	2.5	2.6	2.6	2.6	2.6	2.7	2.6	2.6	2.5	2.6	63
62	2.2	2.3	2.3	2.3	2.4	2.5	2.3	2.4	2.3	2.4	2.4	2.5	2.5	2.5	2.6	2.7	2.5	2.6	2.5	2.6	62
61	2.2	2.3	2.3	2.3	2.4	2.4	2.3	2.4	2.3	2.3	2.4	2.5	2.5	2.5	2.6	2.6	2.5	2.6	2.5	2.5	61
60	2.2	2.3	2.3	2.3	2.4	2.4	2.3	2.4	2.3	2.3	2.4	2.5	2.5	2.5	2.6	2.6	2.5	2.6	2.5	2.5	60

ANTICIPATED ACHIEVEMENT GRADE PLACEMENTS FOR GRADE 3

TABLE 29

ANTICIPATED ACHIEVEMENT GRADE PLACEMENTS FOR GRADE 3

INTELLECTUAL STATUS INDEX	GRADES 3.5 - 3.6 - 3.7										GRADES 3.8 - 3.9										INTELLECTUAL STATUS INDEX
	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB	
140	4.5	4.4	4.4	4.4	4.3	4.3	4.4	4.3	4.4	4.4	4.8	4.7	4.7	4.7	4.6	4.6	4.7	4.6	4.7	4.7	140
139	4.5	4.4	4.4	4.4	4.3	4.3	4.4	4.3	4.4	4.4	4.8	4.7	4.7	4.7	4.6	4.6	4.7	4.6	4.7	4.7	139
138	4.5	4.4	4.4	4.4	4.3	4.2	4.4	4.3	4.4	4.3	4.8	4.7	4.7	4.7	4.6	4.5	4.7	4.6	4.7	4.6	138
137	4.4	4.3	4.3	4.3	4.3	4.2	4.3	4.3	4.4	4.3	4.7	4.6	4.6	4.6	4.6	4.5	4.6	4.6	4.7	4.6	137
136	4.4	4.3	4.3	4.3	4.3	4.2	4.3	4.2	4.3	4.3	4.7	4.6	4.6	4.6	4.6	4.5	4.6	4.5	4.6	4.6	136
135	4.4	4.3	4.3	4.3	4.2	4.2	4.3	4.2	4.3	4.3	4.7	4.6	4.6	4.6	4.5	4.5	4.6	4.5	4.6	4.6	135
134	4.4	4.3	4.3	4.3	4.2	4.2	4.3	4.2	4.3	4.3	4.7	4.6	4.6	4.6	4.5	4.5	4.6	4.5	4.6	4.6	134
133	4.3	4.3	4.3	4.3	4.2	4.2	4.3	4.2	4.3	4.2	4.6	4.6	4.6	4.6	4.5	4.5	4.6	4.5	4.6	4.5	133
132	4.3	4.2	4.2	4.2	4.2	4.1	4.2	4.2	4.3	4.2	4.6	4.5	4.5	4.5	4.5	4.4	4.5	4.5	4.6	4.5	132
131	4.3	4.2	4.2	4.2	4.2	4.1	4.2	4.2	4.2	4.2	4.6	4.5	4.5	4.5	4.5	4.4	4.5	4.5	4.5	4.5	131
130	4.3	4.2	4.2	4.2	4.2	4.1	4.2	4.1	4.2	4.2	4.6	4.5	4.5	4.5	4.5	4.4	4.5	4.4	4.5	4.5	130
129	4.3	4.2	4.2	4.2	4.1	4.1	4.2	4.1	4.2	4.2	4.6	4.5	4.5	4.5	4.4	4.4	4.5	4.4	4.5	4.5	129
128	4.2	4.2	4.2	4.2	4.1	4.1	4.2	4.1	4.2	4.1	4.5	4.5	4.5	4.5	4.4	4.4	4.5	4.4	4.5	4.4	128
127	4.2	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.2	4.1	4.5	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.5	4.4	127
126	4.2	4.1	4.1	4.1	4.1	4.0	4.1	4.1	4.1	4.1	4.5	4.4	4.4	4.4	4.4	4.3	4.4	4.4	4.4	4.4	126
125	4.2	4.1	4.1	4.1	4.1	4.0	4.1	4.1	4.1	4.1	4.5	4.4	4.4	4.4	4.4	4.3	4.4	4.4	4.4	4.4	125
124	4.1	4.1	4.1	4.1	4.0	4.0	4.1	4.0	4.1	4.1	4.4	4.4	4.4	4.4	4.3	4.3	4.4	4.3	4.4	4.4	124
123	4.1	4.1	4.1	4.1	4.0	4.0	4.1	4.0	4.1	4.0	4.4	4.4	4.4	4.4	4.3	4.3	4.4	4.3	4.4	4.3	123
122	4.1	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.1	4.0	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.3	122
121	4.1	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	121
120	4.1	4.0	4.0	4.0	4.0	3.9	4.0	4.0	4.0	4.0	4.4	4.3	4.3	4.3	4.3	4.2	4.3	4.3	4.3	4.3	120
119	4.0	4.0	4.0	4.0	4.0	3.9	4.0	3.9	4.0	4.0	4.3	4.3	4.3	4.3	4.3	4.2	4.3	4.2	4.3	4.3	119
118	4.0	4.0	4.0	4.0	3.9	3.9	4.0	3.9	4.0	3.9	4.3	4.3	4.3	4.3	4.2	4.2	4.3	4.2	4.3	4.2	118
117	4.0	3.9	3.9	3.9	3.9	3.9	3.9	3.9	4.0	3.9	4.3	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.3	4.2	117
116	4.0	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	4.3	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	116
115	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	115
114	3.9	3.9	3.9	3.9	3.9	3.8	3.9	3.9	3.9	3.9	4.2	4.2	4.2	4.2	4.2	4.1	4.2	4.2	4.2	4.2	114
113	3.9	3.9	3.9	3.9	3.8	3.8	3.9	3.8	3.9	3.9	4.2	4.2	4.2	4.2	4.1	4.1	4.2	4.1	4.2	4.2	113
112	3.9	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.2	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	112
111	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	111
110	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	110
109	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	109
108	3.8	3.8	3.8	3.8	3.7	3.7	3.8	3.7	3.8	3.8	4.1	4.1	4.1	4.1	4.1	4.0	4.0	4.1	4.0	4.1	108
107	3.8	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.1	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	107
106	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	106
105	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	105
104	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	104
103	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	103
102	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	102
101	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	101

INTELLECTUAL STATUS INDEX	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB
100	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
99	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
98	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
97	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
96	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
95	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
94	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
93	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
92	3.4	3.4	3.4	3.4	3.5	3.5	3.4	3.5	3.4	3.4
91	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
90	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
89	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
88	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
87	3.3	3.3	3.3	3.3	3.4	3.4	3.3	3.4	3.3	3.3
86	3.3	3.3	3.3	3.3	3.3	3.4	3.3	3.3	3.3	3.3
85	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
84	3.2	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
83	3.2	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.3
82	3.2	3.2	3.2	3.2	3.3	3.3	3.2	3.3	3.2	3.3
81	3.2	3.2	3.2	3.2	3.2	3.3	3.2	3.3	3.2	3.2
80	3.2	3.2	3.2	3.2	3.2	3.3	3.2	3.2	3.2	3.2
79	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
78	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.2
77	3.1	3.1	3.1	3.1	3.2	3.2	3.1	3.2	3.1	3.2
76	3.1	3.1	3.1	3.1	3.2	3.2	3.1	3.2	3.1	3.1
75	3.0	3.1	3.1	3.1	3.1	3.2	3.1	3.2	3.1	3.1
74	3.0	3.1	3.1	3.1	3.1	3.2	3.1	3.1	3.1	3.1
73	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.1
72	3.0	3.0	3.0	3.0	3.1	3.1	3.0	3.1	3.0	3.1
71	2.9	3.0	3.0	3.0	3.1	3.1	3.0	3.1	3.0	3.0
70	2.9	3.0	3.0	3.0	3.0	3.1	3.0	3.1	3.0	3.0
69	2.9	3.0	3.0	3.0	3.0	3.1	3.0	3.0	3.0	3.0
68	2.9	3.0	3.0	3.0	3.0	3.1	3.0	3.0	2.9	3.0
67	2.9	2.9	2.9	2.9	3.0	3.0	2.9	3.0	2.9	3.0
66	2.8	2.9	2.9	2.9	3.0	3.0	2.9	3.0	2.9	2.9
65	2.8	2.9	2.9	2.9	3.0	3.0	2.9	3.0	2.9	2.9
64	2.8	2.9	2.9	2.9	2.9	3.0	2.9	3.0	2.9	2.9
63	2.8	2.9	2.9	2.9	2.9	3.0	2.9	2.9	2.8	2.9
62	2.7	2.8	2.8	2.8	2.9	3.0	2.8	2.9	2.8	2.9
61	2.7	2.8	2.8	2.8	2.9	2.9	2.8	2.9	2.8	2.8
60	2.7	2.8	2.8	2.8	2.9	2.9	2.8	2.9	2.8	2.8

GRADES 3.5 - 3.6 - 3.7

INTELLECTUAL STATUS INDEX	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB
100	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
99	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
98	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
97	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
96	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
95	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
94	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
93	3.7	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
92	3.7	3.7	3.7	3.7	3.8	3.8	3.7	3.8	3.7	3.7
91	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
90	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
89	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
88	3.6	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
87	3.6	3.6	3.6	3.6	3.7	3.7	3.6	3.7	3.6	3.6
86	3.6	3.6	3.6	3.6	3.6	3.7	3.6	3.6	3.6	3.6
85	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
84	3.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
83	3.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.5	3.6
82	3.5	3.5	3.5	3.5	3.6	3.6	3.5	3.6	3.5	3.6
81	3.5	3.5	3.5	3.5	3.5	3.6	3.5	3.6	3.5	3.5
80	3.5	3.5	3.5	3.5	3.5	3.6	3.5	3.5	3.5	3.5
79	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
78	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.5
77	3.4	3.4	3.4	3.4	3.5	3.5	3.4	3.5	3.4	3.5
76	3.4	3.4	3.4	3.4	3.5	3.5	3.4	3.5	3.4	3.4
75	3.3	3.4	3.4	3.4	3.4	3.5	3.4	3.5	3.4	3.4
74	3.3	3.4	3.4	3.4	3.4	3.5	3.4	3.4	3.4	3.4
73	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.4
72	3.3	3.3	3.3	3.3	3.4	3.4	3.3	3.4	3.3	3.4
71	3.2	3.3	3.3	3.3	3.4	3.4	3.3	3.4	3.3	3.3
70	3.2	3.3	3.3	3.3	3.3	3.4	3.3	3.4	3.3	3.3
69	3.2	3.3	3.3	3.3	3.3	3.4	3.3	3.3	3.3	3.3
68	3.2	3.3	3.3	3.3	3.3	3.4	3.3	3.3	3.2	3.3
67	3.2	3.2	3.2	3.2	3.3	3.3	3.2	3.3	3.2	3.3
66	3.1	3.2	3.2	3.2	3.3	3.3	3.2	3.3	3.2	3.2
65	3.1	3.2	3.2	3.2	3.3	3.3	3.2	3.3	3.2	3.2
64	3.1	3.2	3.2	3.2	3.2	3.3	3.2	3.3	3.2	3.2
63	3.1	3.2	3.2	3.2	3.2	3.3	3.2	3.2	3.1	3.2
62	3.0	3.1	3.1	3.1	3.2	3.3	3.1	3.2	3.1	3.2
61	3.0	3.1	3.1	3.1	3.2	3.2	3.1	3.2	3.1	3.1
60	3.0	3.1	3.1	3.1	3.2	3.2	3.1	3.2	3.1	3.1

GRADES 3.8 - 3.9

ANTICIPATED ACHIEVEMENT GRADE PLACEMENTS FOR GRADE 3

TABLE 30

ANTICIPATED ACHIEVEMENT GRADE PLACEMENTS FOR GRADE 4

INTELLECTUAL STATUS INDEX	GRADES 4.0 - 4.1 - 4.2										GRADES 4.3 - 4.4 - 4.5										INTELLECTUAL STATUS INDEX
	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB	
140	5.0	5.0	4.9	4.9	4.8	4.8	4.8	4.8	4.9	4.9	5.3	5.3	5.2	5.2	5.1	5.1	5.1	5.1	5.2	5.2	140
139	4.9	5.0	4.9	4.9	4.8	4.7	4.8	4.8	4.9	4.9	5.2	5.3	5.2	5.2	5.1	5.0	5.1	5.1	5.2	5.2	139
138	4.9	5.0	4.9	4.9	4.8	4.7	4.7	4.8	4.9	4.9	5.2	5.3	5.2	5.2	5.1	5.0	5.0	5.1	5.2	5.2	138
137	4.9	5.0	4.9	4.8	4.8	4.7	4.7	4.8	4.9	4.9	5.2	5.3	5.2	5.1	5.1	5.0	5.0	5.1	5.2	5.2	137
136	4.9	4.9	4.9	4.8	4.8	4.7	4.7	4.7	4.9	4.9	5.2	5.2	5.2	5.1	5.1	5.0	5.0	5.0	5.2	5.2	136
135	4.8	4.9	4.8	4.8	4.7	4.7	4.7	4.7	4.8	4.8	5.1	5.2	5.1	5.1	5.0	5.0	5.0	5.0	5.1	5.1	135
134	4.8	4.9	4.8	4.8	4.7	4.7	4.7	4.7	4.8	4.8	5.1	5.2	5.1	5.1	5.0	5.0	5.0	5.0	5.1	5.1	134
133	4.8	4.9	4.8	4.8	4.7	4.6	4.7	4.7	4.8	4.8	5.1	5.2	5.1	5.1	5.0	4.9	5.0	5.0	5.1	5.1	133
132	4.8	4.8	4.8	4.7	4.7	4.6	4.6	4.7	4.8	4.8	5.1	5.1	5.1	5.0	5.0	4.9	4.9	5.0	5.1	5.1	132
131	4.7	4.8	4.8	4.7	4.7	4.6	4.6	4.7	4.8	4.8	5.0	5.1	5.1	5.0	5.0	4.9	4.9	5.0	5.1	5.1	131
130	4.7	4.8	4.7	4.7	4.7	4.6	4.6	4.6	4.7	4.7	5.0	5.1	5.0	5.0	5.0	4.9	4.9	4.9	5.0	5.0	130
129	4.7	4.8	4.7	4.7	4.6	4.6	4.6	4.6	4.7	4.7	5.0	5.1	5.0	5.0	4.9	4.9	4.9	4.9	5.0	5.0	129
128	4.7	4.7	4.7	4.7	4.6	4.6	4.6	4.6	4.7	4.7	5.0	5.0	5.0	5.0	4.9	4.9	4.9	4.9	5.0	5.0	128
127	4.7	4.7	4.7	4.6	4.6	4.5	4.6	4.6	4.7	4.7	5.0	5.0	5.0	4.9	4.9	4.8	4.9	4.9	5.0	5.0	127
126	4.6	4.7	4.6	4.6	4.6	4.5	4.5	4.6	4.6	4.6	4.9	5.0	4.9	4.9	4.9	4.8	4.8	4.9	4.9	4.9	126
125	4.6	4.7	4.6	4.6	4.6	4.5	4.5	4.6	4.6	4.6	4.9	5.0	4.9	4.9	4.9	4.8	4.8	4.9	4.9	4.9	125
124	4.6	4.7	4.6	4.6	4.5	4.5	4.5	4.5	4.6	4.6	4.9	5.0	4.9	4.9	4.8	4.8	4.8	4.8	4.9	4.9	124
123	4.6	4.6	4.6	4.6	4.5	4.5	4.5	4.5	4.6	4.6	4.9	4.9	4.9	4.9	4.8	4.8	4.8	4.8	4.9	4.9	123
122	4.5	4.6	4.6	4.5	4.5	4.5	4.5	4.5	4.6	4.6	4.8	4.9	4.9	4.8	4.8	4.8	4.8	4.8	4.9	4.9	122
121	4.5	4.6	4.5	4.5	4.5	4.4	4.5	4.5	4.5	4.5	4.8	4.9	4.8	4.8	4.8	4.7	4.8	4.8	4.8	4.8	121
120	4.5	4.6	4.5	4.5	4.5	4.4	4.4	4.5	4.5	4.5	4.8	4.9	4.8	4.8	4.8	4.7	4.7	4.8	4.8	4.8	120
119	4.5	4.5	4.5	4.5	4.5	4.4	4.4	4.4	4.5	4.5	4.8	4.8	4.8	4.8	4.8	4.7	4.7	4.7	4.8	4.8	119
118	4.5	4.5	4.5	4.5	4.4	4.4	4.4	4.4	4.5	4.5	4.8	4.8	4.8	4.8	4.7	4.7	4.7	4.7	4.8	4.8	118
117	4.4	4.5	4.5	4.4	4.4	4.4	4.4	4.4	4.5	4.5	4.7	4.8	4.8	4.7	4.7	4.7	4.7	4.7	4.8	4.8	117
116	4.4	4.5	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.7	4.8	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	116
115	4.4	4.4	4.4	4.4	4.4	4.3	4.4	4.4	4.4	4.4	4.7	4.7	4.7	4.7	4.7	4.6	4.7	4.7	4.7	4.7	115
114	4.4	4.4	4.4	4.4	4.4	4.3	4.3	4.4	4.4	4.4	4.7	4.7	4.7	4.7	4.7	4.6	4.6	4.7	4.7	4.7	114
113	4.3	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.4	4.4	4.6	4.7	4.7	4.7	4.6	4.6	4.6	4.6	4.7	4.7	113
112	4.3	4.4	4.4	4.3	4.3	4.3	4.3	4.3	4.4	4.4	4.6	4.7	4.7	4.6	4.6	4.6	4.6	4.6	4.7	4.7	112
111	4.3	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.6	4.7	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	111
110	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	110
109	4.3	4.3	4.3	4.3	4.3	4.2	4.3	4.3	4.3	4.3	4.6	4.6	4.6	4.6	4.6	4.5	4.6	4.6	4.6	4.6	109
108	4.2	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.3	4.3	4.5	4.6	4.6	4.6	4.5	4.5	4.5	4.5	4.6	4.6	108
107	4.2	4.3	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.5	4.6	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	107
106	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	106
105	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	105
104	4.1	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.4	4.5	4.5	4.5	4.5	4.5	4.4	4.5	4.5	4.5	104
103	4.1	4.2	4.2	4.2	4.2	4.1	4.2	4.2	4.2	4.2	4.4	4.5	4.5	4.5	4.5	4.4	4.4	4.4	4.5	4.5	103
102	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	102
101	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	101

INTELLECTUAL STATUS INDEX	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB	RV	RC	TR	AR	AF	TA	ME	SP	TL	TB	INTELLECTUAL STATUS INDEX
	GRADES 4.0 - 4.1 - 4.2										GRADES 4.3 - 4.4 - 4.5										
100	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	100
99	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.3	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	99
98	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.3	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	98
97	4.0	4.0	4.0	4.0	4.0	4.1	4.0	4.0	4.0	4.0	4.3	4.3	4.3	4.3	4.3	4.4	4.3	4.3	4.3	4.3	97
96	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	96
95	3.9	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.2	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	95
94	3.9	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.2	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	94
93	3.9	3.9	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.2	4.2	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	93
92	3.9	3.9	3.9	3.9	4.0	4.0	4.0	4.0	3.9	3.9	4.2	4.2	4.2	4.2	4.3	4.3	4.3	4.3	4.2	4.2	92
91	3.8	3.9	3.9	3.9	3.9	4.0	3.9	3.9	3.9	3.9	4.1	4.2	4.2	4.2	4.2	4.3	4.2	4.2	4.2	4.2	91
90	3.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	4.1	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	90
89	3.8	3.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	4.1	4.1	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	89
88	3.8	3.8	3.8	3.9	3.9	3.9	3.9	3.9	3.8	3.8	4.1	4.1	4.1	4.2	4.2	4.2	4.2	4.2	4.1	4.1	88
87	3.8	3.8	3.8	3.8	3.9	3.9	3.9	3.9	3.8	3.8	4.1	4.1	4.1	4.1	4.2	4.2	4.2	4.2	4.1	4.1	87
86	3.7	3.8	3.8	3.8	3.8	3.9	3.9	3.8	3.8	3.8	4.0	4.1	4.1	4.1	4.1	4.2	4.2	4.1	4.1	4.1	86
85	3.7	3.8	3.8	3.8	3.8	3.9	3.8	3.8	3.8	3.8	4.0	4.1	4.1	4.1	4.1	4.2	4.1	4.1	4.1	4.1	85
84	3.7	3.7	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	84
83	3.7	3.7	3.7	3.8	3.8	3.8	3.8	3.8	3.7	3.7	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.0	4.0	83
82	3.6	3.7	3.7	3.7	3.8	3.8	3.8	3.8	3.7	3.7	3.9	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.0	4.0	82
81	3.6	3.7	3.7	3.7	3.7	3.8	3.8	3.8	3.7	3.7	3.9	4.0	4.0	4.0	4.0	4.1	4.1	4.1	4.0	4.0	81
80	3.6	3.6	3.7	3.7	3.7	3.8	3.8	3.7	3.7	3.7	3.9	3.9	4.0	4.0	4.0	4.1	4.1	4.0	4.0	4.0	80
79	3.6	3.6	3.7	3.7	3.7	3.8	3.7	3.7	3.7	3.7	3.9	3.9	4.0	4.0	4.0	4.1	4.0	4.0	4.0	4.0	79
78	3.6	3.6	3.6	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.9	3.9	3.9	4.0	4.0	4.0	4.0	4.0	3.9	3.9	78
77	3.5	3.6	3.6	3.6	3.7	3.7	3.7	3.7	3.6	3.6	3.8	3.9	3.9	3.9	4.0	4.0	4.0	4.0	3.9	3.9	77
76	3.5	3.5	3.6	3.6	3.7	3.7	3.7	3.7	3.6	3.6	3.8	3.8	3.9	3.9	4.0	4.0	4.0	4.0	3.9	3.9	76
75	3.5	3.5	3.6	3.6	3.6	3.7	3.7	3.7	3.6	3.6	3.8	3.8	3.9	3.9	3.9	4.0	4.0	4.0	3.9	3.9	75
74	3.5	3.5	3.6	3.6	3.6	3.7	3.7	3.6	3.6	3.6	3.8	3.8	3.9	3.9	3.9	4.0	4.0	3.9	3.9	3.9	74
73	3.4	3.5	3.5	3.6	3.6	3.7	3.6	3.6	3.5	3.5	3.7	3.8	3.8	3.9	3.9	4.0	3.9	3.9	3.8	3.8	73
72	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.5	3.5	3.7	3.8	3.8	3.8	3.9	3.9	3.9	3.9	3.8	3.8	72
71	3.4	3.4	3.5	3.5	3.6	3.6	3.6	3.6	3.5	3.5	3.7	3.7	3.8	3.8	3.9	3.9	3.9	3.9	3.8	3.8	71
70	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.5	3.5	3.7	3.7	3.8	3.8	3.8	3.9	3.9	3.9	3.8	3.8	70
69	3.4	3.4	3.4	3.5	3.5	3.6	3.6	3.5	3.4	3.4	3.7	3.7	3.7	3.8	3.8	3.9	3.9	3.8	3.7	3.7	69
68	3.3	3.4	3.4	3.5	3.5	3.6	3.6	3.5	3.4	3.4	3.6	3.7	3.7	3.8	3.8	3.9	3.9	3.8	3.7	3.7	68
67	3.3	3.3	3.4	3.4	3.5	3.6	3.5	3.5	3.4	3.4	3.6	3.6	3.7	3.7	3.8	3.9	3.8	3.8	3.7	3.7	67
66	3.3	3.3	3.4	3.4	3.5	3.5	3.5	3.5	3.4	3.4	3.6	3.6	3.7	3.7	3.8	3.8	3.8	3.8	3.7	3.7	66
65	3.3	3.3	3.4	3.4	3.5	3.5	3.5	3.5	3.4	3.4	3.6	3.6	3.7	3.7	3.8	3.8	3.8	3.8	3.7	3.7	65
64	3.2	3.3	3.3	3.4	3.4	3.5	3.5	3.5	3.3	3.3	3.5	3.6	3.6	3.7	3.7	3.8	3.8	3.8	3.6	3.6	64
63	3.2	3.2	3.3	3.4	3.4	3.5	3.5	3.4	3.3	3.3	3.5	3.5	3.6	3.7	3.7	3.8	3.8	3.7	3.6	3.6	63
62	3.2	3.2	3.3	3.3	3.4	3.5	3.5	3.4	3.3	3.3	3.5	3.5	3.6	3.6	3.7	3.8	3.8	3.7	3.6	3.6	62
61	3.2	3.2	3.3	3.3	3.4	3.5	3.4	3.4	3.3	3.3	3.5	3.5	3.6	3.6	3.7	3.8	3.7	3.7	3.6	3.6	61
60	3.2	3.2	3.3	3.3	3.4	3.4	3.4	3.4	3.3	3.3	3.5	3.5	3.6	3.6	3.7	3.7	3.7	3.7	3.6	3.6	60

ANTICIPATED ACHIEVEMENT GRADE PLACEMENTS FOR GRADE 4