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ANNOUNCEMENT FOR 1918-'19.

1. The Bureau of Educational Measurements and Standards is now entering upon its fourth year of service. The increasing number of school men who are turning to us for the service which we are prepared to give is very gratifying. The most notable achievements of the Bureau during the last year have been (1) the derivation and standardization of a series of Standardized Silent Reading Tests, (2) the derivation and standardization of a series of Diagnostic Tests in Arithmetic, and (3) the derivation of a series of Standardized Reasoning Tests in Arithmetic.

2. During the year 1918-'19 the Bureau of Educational Measurements and Standards will continue, as heretofore, to supply teachers and superintendents tests and scales at cost. For all these, complete directions and tabulation sheets will be supplied. In case we fail to supply a sufficient number of record sheets we are always glad to send additional ones on request. If any difficulty is experienced in administering the tests we are always glad to answer questions.

3. We shall continue the standardization of the tests which are distributed from the office of the Bureau of Educational Measurements and Standards. In order that this may be done effectively it is necessary that all who profit by our services report their scores promptly. If a sufficient number of class record sheets have not been furnished with the tests so that duplicates may be retained by the teacher, we will be glad to supply additional ones upon request.

4. During the year of 1918-'19 we shall continue a study of the particular difficulties which pupils experience in learning. Some work in this field has been done during the past year in the case of spelling and arithmetic. This is a very important problem because before it will be possible for us to assist most effectively those pupils who have low scores, it will be necessary that we know more about the difficulties which children experience in learning. Special directions and blanks for carrying on this work have been devised, and all who think they might be interested in carrying on this type of study with their pupils are cordially invited to write the Bureau for information.

5. At this time, when the resources of the American people are being tested as they have never been tested before, it is imperative that the public schools be raised to their highest possible level of efficiency. The use of educational tests in thousands of American schools has demonstrated conclusively that educational tests are indispensable if the superintendent or teacher wishes to attain the highest degree of efficiency. It is, therefore, entirely appropriate that we urge the superintendents and teachers of Kansas to make an even larger use of tests in their schools this year than they have in the past.

WALTER S. MONROE, *Director.*

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SEP 3 1918



SOME QUESTIONS ANSWERED.

Below are given the answers to certain questions which are frequently asked:

QUESTION 1. *Is it possible to measure the results of education by means of tests?*

ANSWER. This is the first question which arises in the minds of many when tests or examinations are mentioned. During the past twenty-five years examinations have been opposed by many. For the most part this opposition has been emotional and prejudiced rather than intelligent. There are a few who still cling to this opposition, but they are rarely heard in educational gatherings and in our educational periodicals. If one will examine our educational literature of the past five years, or study present educational practice, he will find unmistakable evidence which shows that our educators are generally agreed that the results of education can be measured. (See the statement by Professor Thorndike which is printed on the outside cover.)

Some are agreed that it is possible to measure what a pupil remembers, but that his ability to think cannot be measured. While it may be true that our instruments for measuring ability to reason are less perfect than our instruments for measuring what the pupil remembers, we are now able to measure certain types of reasoning ability. For the measurement of other outcomes of education our instruments are less perfect, but their perfection is not beyond the realm of possibility.

QUESTION 2. *What is a standardized test?*

ANSWER. In the *first* place, a standardized test consists of exercises or questions which have been very carefully chosen on the basis of a scientific analysis of the field of subject matter from which they are taken. They have *also* been scientifically evaluated, so that one knows how much credit a pupil should receive for doing each of the exercises. In the *third* place, the standardized test is accompanied by specific directions for giving it to a pupil, for marking the papers and for tabulating the scores. In the *fourth* place—and this is very important—a standardized test has been given to a large number of pupils, and as a result of this we know what score a pupil in any grade should make; that is, the test has been standardized. Aside from the standard for the test, the fact that it has been given to a large number of pupils insures that it is a usable test.

QUESTION 3. *What is a standard?*

ANSWER. A standard is a statement of the score which a pupil in a given grade should make when tested under specified conditions. For example: When we say that the standard for handwriting in the fourth grade is a rate of 56 letters per minute and a quality of 50 on Ayres' Scale, we have stated the scores which a pupil of a fourth grade should make when he has satisfactory ability in handwriting.

QUESTION 4. *What is the value of standards?*

ANSWER. Standards are absolutely necessary in order to know what scores mean. Without standards one cannot know whether a pupil's score or "grade" on a test is high or low, because it is high or low only with reference to the standard. Trees, houses, men or other objects are described as high or low only with reference to the standard height of their class. A man seven feet high is described as very tall, but a tree seven feet high is not a tall tree.

Standards are very helpful to teachers in another way. They furnish a teacher with a definite statement of what should be her aim. Her aim should be to bring her pupils up to standard.

QUESTION 5. *How do standardized tests differ from ordinary examinations?*

ANSWER. In the first place, standardized tests are devised according to scientific procedure. The choice or formulation of the questions of the ordinary examination are based only on the judgment of one teacher, and frequently the teacher does not give them very careful consideration.

For the ordinary examination there is no standard. In the case of a standardized test we have a statement of what scores the pupils of the several grades should make. In the case of the ordinary examinations the teacher has only her judgment upon which to determine whether or not the pupils have made satisfactory scores. A standardized test has generally been given to pupils of many other schools, and it is possible for a teacher to compare the scores made by her pupils with scores made by pupils in similar grades in other cities. Ordinary examinations are generally given only to one class and teachers have no basis for comparison.

QUESTION 6. *Why should teachers use standardized tests?*

ANSWER. Standardized tests have been used systematically in a sufficient number of schools so that it is possible to give a positive answer to this question based upon recorded facts. There is no need for opinion or conjecture. The value of standardized tests has been demonstrated. They are helpful in many ways.

In the first place, scientific investigation has shown that the judgment of individual teachers is very unreliable. A teacher is often mistaken concerning the ability of the pupils of her class. It has been found that pupils which she considered exceptionally capable in reading were below standard. On the other hand, some cases have been found where the teachers have produced in their pupils an unusual degree of ability, and in so doing have probably not used the time of the pupils in the most profitable way. Standardized tests furnish a means whereby a teacher may check up her work and determine whether or not her pupils have standard ability.

Standardized tests also furnish a means for determining what pupils are below standard and wherein the pupils are in need of special instruction. The ones who are below standard are the ones who have not profited sufficiently by the instruction which has been given to all members of the class. In many cases a little special assistance will result in greatly increasing the pupil's ability.

In the third place, the standards furnish the teacher with the best definite statement of what her aim should be in the teaching of the several subjects.

The standards are stated in terms of results and not in terms of subject matter. This is as it should be. The teacher should have in mind constantly the results to be attained by means of the subject matter, rather than simply the teaching of the subject matter.

QUESTION 7. *What is diagnosis?*

ANSWER. Scientific investigation has shown that in a subject such as arithmetic there is not one ability, but a large number of abilities. Thus the pupil is not merely good in arithmetic or poor in arithmetic, but rather he is good in doing certain types of examples or poor in doing certain other types of examples. It is very seldom that a pupil can do equally well all types of examples when he has been taught by our usual methods. It frequently happens that a pupil is good in addition, poor in subtraction, and weak in multiplication. In some cases a pupil is good in adding short-column addition but poor in doing long-column addition.

Diagnosis is determining, first, just what the pupil's weaknesses are, and second, the reason for the weaknesses.

QUESTION 8. *Do all standardized tests yield a diagnosis?*

ANSWER. A test such as Courtis's Standardized Research Tests in Arithmetic, Series B, or Monroe's Standardized Silent Reading Tests, or Ayres' Handwriting Scale are not generally thought of as furnishing a diagnosis of the ability of pupils. These are rather general tests. They combine into one score the measurement of several abilities. For the purpose of diagnosis, tests specially prepared for this purpose should be used. In arithmetic we recommend Monroe's Diagnostic Tests in Arithmetic, or the Cleveland Survey Tests; in handwriting, Freeman's Handwriting Scale or Gray's Score Card; in reading, Thorndike's Visual Vocabulary Test, and also Thorndike's Reading Scale for the Understanding of Sentences; in spelling, Monroe's Timed Sentence Spelling Test.

QUESTION 9. *What is remedial instruction?*

ANSWER. Remedial instruction is instruction given to remedy particular weaknesses which have been revealed by diagnosis. Specific suggestions for remedial instruction are given in Monroe's Educational Tests and Measurements, published by Houghton Mifflin Company.

QUESTION 10. *Does the giving of tests increase the ability of pupils?*

ANSWER. Simply giving a test, no matter how good it is, probably will affect the ability of the pupils very little if at all. Standardized tests are not teaching devices. Their function is to furnish information which a teacher may use in planning her instruction more wisely. They are instruments for measuring.

Some teachers have misunderstood the purpose of standardized tests. They have thought the giving of a test should increase the ability of pupils, and have expressed surprise when they found that their pupils had not been improved by the giving of the tests. This is a mistaken idea of what the tests are for. The tests can be made very helpful to a teacher, but a teacher must understand their function and use them in this way.

QUESTION 11. *Are standardized tests a fad or have they come to stay?*

ANSWER. There is no doubt concerning the answer to this question. While standardized tests may be considered a fad in some communities, their use undoubtedly has become a permanent feature in the public schools. The Courtis Standard Research Tests in Arithmetic, Series B, are being used at the rate of more than a half million copies a year. Nearly a million of the Kansas Silent Reading Tests have been used. A number of school systems have organized special departments for the purpose of carrying on measurements in the public schools. Educational tests are being used by commercial concerns for selecting employees. These facts, together with the widespread use of educational tests in the federal army, make it reasonably certain that the next few years will witness a remarkable growth in the use of standardized tests in our public schools. The time is undoubtedly rapidly approaching when a teacher above the primary grades will not be considered qualified for her work until she is acquainted with educational tests and understands how to use them.

QUESTION 12. *When should standardized tests be given?*

ANSWER. It has been pointed out above, the purpose of standardized tests is to furnish teachers with information concerning the abilities of the pupils. The most helpful time for the teacher to have this information is as early in the school year as possible. However, if they are not given early in the school year it will be helpful to give them at any time.

It is also very helpful to give the tests a second time during the school year, at either the middle or close of the school year, in order that the teacher may learn in what respects she has improved the abilities of her pupils. For the purpose of this second testing there are now obtainable duplicate forms of several of the tests. These duplicate forms are equivalent in difficulty, but constructed with different exercises, so that the pupil's acquaintance with the tests will not affect his score.

QUESTION 13. *Does the use of standardized tests require special training?*

ANSWER. Training is, of course, very helpful, and a teacher who has been trained will be able to profit more by using standardized tests, but any teacher who is willing to devote a little time to the study of a test and its purpose can use it with profit. In the bibliography given on page 16 are given references from which any one who is interested can obtain the information which is necessary for effective use of standardized tests.

QUESTION 14. *Can standardized tests be used in rural schools or in ungraded schools?*

ANSWER. Yes. Most of the standardized tests are arranged so that they may be given to a group of pupils belonging to different grades just as easily as they can be given to the groups of pupils who are of the same grade.

In addition to this it should be noted that for the teacher of the ungraded school the standardized tests may be more helpful than to the teacher in the city school system. A teacher who is working alone is more in need of a definite standard for checking up her instruction than a teacher who is carefully supervised.

QUESTION 15. *Is it wise for a teacher in a school system to use the standardized tests when they are not being used throughout the entire school system?*

ANSWER. Yes. So far as the individual teacher is concerned, she probably can get as much value from using the tests in her room as if they were used throughout the entire system. It is of course true that the superintendent or principal profits very little by the giving of a test in a single room. For the benefit of the supervisor the tests should be given throughout the entire system.

QUESTION 16. *How extensively are standardized tests being used?*

ANSWER. In answering question 11 we indicate the extent to which standardized tests are being used. It is safe to say that standardized tests are being very widely used. The Bureau of Educational Measurements and Standards at the Kansas State Normal is just one of several distributing agencies. During the past year we have received on the average more than one hundred orders for standardized tests each month.

QUESTION 17. *What standardized tests are available?*

ANSWER. There are a very large number of tests available, most of which have been standardized. The most complete list of these tests which has yet been published may be found in the Seventeenth Yearbook of the National Society for the Study of Education, Part Two; the Measurement of Educational Products. In this circular there are listed several of the most valuable standardized tests. By studying these pages one will be able to select tests which are appropriate for his purpose.

QUESTION 18. *Are standardized tests difficult to use, and do they require a great deal of the teacher's time?*

ANSWER. Many of the standardized tests are very simple to use. In practically all cases the tests are accompanied by complete and explicit directions for their use. A few of the tests are rather difficult to use, and they should be avoided by one who is not experienced in this work.

Many of the standardized tests require only a very small amount of time for their use. In general the amount of time required is less than that required for the ordinary test or examination prepared by the teacher. In the first place, the test is already prepared; the teacher does not have to prepare the questions. In the second place, the test is accompanied by explicit directions for giving it, for marking the test papers, and for tabulating results on the accompanying blanks. In the third place, many of the standardized tests have been prepared with a view to economizing time as much as possible. The questions have been formulated and arranged so that the pupil can give the greatest possible amount of information concerning his ability in a limited time, and special devices are provided for shortening the teacher's work.

QUESTION 19. *What tests should be selected for use?*

ANSWER. One who is planning to use standardized tests for the first time should select one which is simple to use and one which will require only a moderate amount of time. Simplicity of use is probably the most important characteristic to be kept in mind for a teacher selecting a test from such a

list as is given in this circular. The nature of the test, what it measures and its function should also be kept in mind. If one wishes to diagnose the ability of pupils one should select a diagnostic test. If one wishes only general information, the test suitable for this purpose should be selected. W. A. McCall, in *School and Society* for February 16, 1918, has listed fourteen criteria that should be considered in choosing a test. One who is making a critical study of this matter will find Dr. McCall's article interesting and helpful.

QUESTION 20. *How may one secure standardized tests?*

ANSWER. The Bureau of Educational Measurements and Standards of the Kansas State Normal School publishes a number of standardized tests, and a few others are kept in stock for distribution. These are listed on the following pages of this circular. A few other important tests are also listed, with the addresses from which they may be obtained.

STANDARDIZED TESTS FOR USE IN THE ELEMENTARY SCHOOLS.

Descriptions of a few of the most important educational tests are given below. The tests mentioned are those whose value has been demonstrated or those which give much promise of being valuable tests.

The Bureau of Educational Measurements and Standards has for distribution only certain of these tests. All others can be secured from the addresses which are given. The Bureau plans to keep on file all the available tests not mentioned in this list and is glad to furnish information concerning them.

IMPORTANT. Because of the increase in postage rates and increased costs of supplies, it has been necessary to make a slight increase in the prices of most of the tests. The new prices, however, barely cover the actual costs of printing and distribution. No attempt is made to support the research work of the Bureau from the sale of the tests.

A discount of 10 percent will be given on all orders which amount to one dollar or more for cities within the state of Kansas.

Address all orders and communications to the Bureau of Educational Measurements and Standards, Kansas State Normal School, Emporia, Kan.

ARITHMETIC.

Courtis' Standard Research Tests, Series B. This series of tests consists of one test on each of the four fundamental operations. The tests measure the speed and accuracy with which the pupil can perform these operations with one type of example, and thus are suitable for general measurements. The total working time of the class is twenty-six minutes. The administration of the tests is very simple. They have been used extensively since their first publication in 1914. The measures have been proved reliable in 75 to 90 percent of the cases. They are used in grades IV to VIII, inclusive. Superintendents and teachers in Kansas may obtain these tests from the Bureau of Educational Measurements and Standards, Emporia, Kan.

Price, including complete directions and record sheets, 90 cents per 100 copies; in quantities less than 100, 1 cent apiece; postage extra, 10 cents per 100 copies. Persons not living in Kansas should order these tests from Courtis Standard Research Tests, 82 Eliot street, Detroit, Mich.

Monroe's Diagnostic Tests in Arithmetic. This is a series of 21 tests, including operations with integers, common fractions and decimals. The tests are arranged so that the total time required for giving them is only thirty-one minutes. The diagnosis secured by means of these tests is the most complete that can be secured by any series of tests now available. They are designed to supplement the Courtis' tests described above, and are more helpful to the teacher. Tests 1-11 are on integers and may be used in grades 4-8. Tests 12-16 are on common fractions and may be used in grades 5-8. Tests 17-21 are on decimal fractions and may be used in grades 6-8.

Price, including complete directions and record sheets; Tests 1-11, \$1 per 100 copies; postage extra, 20 cents per 100 copies. Tests 12-16, 50 cents per 100 copies. Tests 17-21, 50 cents per 100; postage extra, 10 cents per 100.

A diagnosis secured by means of these tests may be supplemented by means of an analytical diagnosis. Those who are interested are invited to write the Bureau of Educational Measurements and Standards.

Cleveland-Survey Tests. These were designed for use in the survey of the Cleveland public schools. They have been revised slightly and used in the surveys at Grand Rapids and St. Louis. The tests consist of a series of fifteen tests, including four tests on addition, two on subtraction, three on multiplication, four on division, and two on addition and subtraction of common fractions. The total working time is twenty-two minutes. The administration of the tests is simple. Complete directions are provided for giving the tests, but none for tabulating the scores. These tests furnish a more detailed analysis than can be secured by means of the Curtis' Standard Research Tests, Series B. Copies may be obtained from Charles H. Judd, School of Education, University of Chicago, Chicago, Ill.

Price, \$1 per hundred pupils. Reference: Charles H. Judd, *Measuring the Work of the Public Schools*, Cleveland Foundation, Cleveland, Ohio.

Monroe's Standardized Reasoning Tests. A series of reasoning tests are in the process of derivation and will be ready for distribution by the middle of October. These tests are based on the results of a very careful analysis of over nine thousand problems. Test 1 will be for grades 4 and 5, Test 2 for grades 6 and 7, and Test 3 for grade 8. Three forms of each test will be available. The price cannot be definitely fixed until arrangements have been made for printing.

They will probably be sold at 50 cents per hundred; postage extra, 9 cents per hundred.

ENGLISH COMPOSITION.

Harvard-Newton Composition Scale. This scale has been distributed by the Bureau of Educational Measurements and Standards for the past two years, and several hundred copies have been placed in the hands of teachers both in the state of Kansas and in other states. However, practically no reports of its use have been received. This fact indicates that the teachers have found the scale too difficult to use, and for that reason the Bureau of Educational Measurements and Standards is discontinuing the distribution of the scale. *Copies of the scale may be secured from the Harvard University Press, Cambridge, Mass.*

Scale for Measuring Written Composition, devised by M. H. Willing. This scale was devised in connection with the survey of the public schools of Denver, Colo., and has been used in a number of school surveys. This scale differs in a number of respects from the Harvard-Newton Composition Scale, and it is thought that it will prove more satisfactory. An experimental edition of the scale has been printed by the Bureau of Educational Measurements and Standards. As long as this edition lasts, copies will be sent free to teachers and superintendents in Kansas. A limited number of copies will be mailed upon request to superintendents and teachers outside the state, with the understanding that they will report their experience in using the scale.

HANDWRITING.

Ayres' Measuring Scale for Handwriting. This scale is designed for measuring the handwriting of children, and consists of three series of samples of handwriting arranged in order of "legibility." Directions for using the scale and a class-record sheet have been devised by the Bureau of Educational Measurements and Standards. The scale has been used very extensively. Copies may be obtained from the Bureau of Educational Measurements and Standards, Emporia, Kan.

Price, 5 cents; postage extra, 1 cent per copy.

Ayres' Gettysburg Edition. This is a new scale devised by Dr. L. P. Ayres as the result of his experience in using the scale described above. This scale differs from the above scale in several respects. It has only one specimen for each step. The specimens are written on ruled paper and the copy is the same for all specimens. Directions for securing samples of pupils' handwriting, when writing the same copy, are printed on the scale. Standards for speed and quality are also printed on the scale. Ayres asserts that this scale will yield more reliable measurements of handwriting than can be secured by the use of the other scale.

Price, 5 cents; postage extra, 1 cent per copy.

Courtis' Handwriting Tests, Series W. The situation in handwriting is peculiar. It is necessary to distinguish between the methods of securing samples and the methods of scoring them. Series W provides for the securing of two samples of handwriting from each child. One of these is a "maximum performance" sample, in which the child is urged to do his best on material upon which he has had one day's preparation. The other is a copying test, in which the child's attention is diverted from his handwriting so that he writes at the rate and with the quality which is most natural to him. Both these tests yield scores for rate of writing and for quality. Quality should be measured by the Ayres' Scale. A comparison of the two results shows whether or not the training in handwriting is functioning. The test is a new one, and is offered for standardization. Requires two class periods to give and two hours' time to score, exclusive of training in the use of a handwriting scale.

Price, test only, per thousand, \$8. In sets of forty with instructions, record sheets, copy of Ayres' Scale, complete, 45 cents, postage extra. Address Courtis' Standard Research Tests, 82 Eliot street, Detroit, Mich.

Freeman's Handwriting Scale: This scale consists of five series of samples of handwriting and is suitable for the diagnosis of handwriting. Each series is arranged according to a single characteristic of handwriting. The five characteristics recognized are (1) uniformity of slant, (2) uniformity of alignment, (3) quality of line, (4) letter formation, and (5) spacing. The scale furnishes a diagnosis of the pupil's handwriting. Directions for using the scale and a record card have been devised by the Bureau of Educational Measurements and Standards, Emporia, Kan.

Price, 25 cents; postage extra, 2 cents per copy.

SILENT READING.

The Kansas Silent Reading Tests, devised by F. J. Kelly. These tests consist of graded lists of exercises which have been carefully evaluated. Each exercise consists of the directions for doing something which is very simple after the pupil has fully understood the directions. His comprehension of the exercise is measured by what he does. The administration of the tests is very simple. The working time of the pupils is five minutes. The tests have been used extensively. For copies of the tests address Bureau of Educational Measurements and Standards, Emporia, Kan. Test I is for grades 3, 4 and 5; Test II, for grades 6, 7 and 8.

The general distribution of Kansas Silent Reading Tests will be discontinued except in those cases where they are especially desired. Monroe's Standardized Silent Reading Tests described below are believed to be superior and will be sent unless explicit directions to the contrary are given.

Price, including complete directions and record sheets, 50 cents per one hundred; postage extra, 9 cents per one hundred.

Monroe's Standardized Silent Reading Tests. These tests are similar in many respects to the Kansas Silent Reading Tests, but possess certain points of superiority. The exercises are more uniform in character and have been more carefully selected and evaluated. The rate at which the pupil reads is measured in addition to the comprehension. The tests are available in three forms. Test I is for grades 3, 4 and 5; Test II is for grades 6, 7, and 8; and Test III is for grades 9, 10, 11 and 12.

Price, including complete directions and record sheets, 50 cents per one hundred copies; postage extra, 9 cents per one hundred.

Courtis' Silent Reading Test No. 2. This is the first of a series of tests covering the various phases of silent reading. Suitable for grades 2 to '6, inclusive. Consists of a simple story and of questions about the story. Yields measures of rate of reading and of degree of comprehension. Available in three editions of equal difficulty: The Kitten Who Played May Queen (Form 1); The Kitten Who Went to a Picnic (Form 2); The Kitten Who Caught a Fish (Form 3). Requires 45 minutes to give and 1½ hours to score the papers of one class of 40 children.

Price, test only, per thousand, \$18. In sets of 40, with instructions, records, etc., complete, 85 cents; postage extra. Address Courtis' Standard Research Tests, 82 Eliot street, Detroit, Mich.

Gray's Silent Reading Tests. These tests consist of a series of three selections, the first being for the pupils of the second and third grades, the second for pupils of the fourth, fifth and sixth grades, and the third for pupils of the seventh and eighth grades. The pupil is permitted to read the entire selection, his rate of reading being obtained by using a stop watch. His comprehension is measured by his ability to reproduce the story and to answer certain questions. The test can be given to only one pupil at a time, and the scoring of the pupils' reproductions requires considerable additional time, but the tests furnish a more detailed measure of ability to read than the tests described above. They may be used to supplement the Kansas Silent Reading Tests. The tests were used in the survey of the Cleveland public schools. Copies of the tests may be obtained from William S. Gray, School of Education, University of Chicago, Chicago, Ill.

Price, \$1.50 per hundred. Complete directions are furnished with the tests. Reference: Charles H. Judd, *Measuring the Work of the Public Schools*, Cleveland Foundation, Cleveland, Ohio.

Thorndike's Scale Alpha for Measuring the Understanding of Sentences. This silent reading test consists of a carefully graded series of paragraphs for use in grades 3 to 8, inclusive. Each paragraph is followed by several questions which the child is to answer as he reads the paragraph. The pupil's answers to the questions determine the measure of his comprehension. In the copy of the *Teachers College Record* which describes the derivation of this scale, there is given a score card for marking the answers to these questions. This makes these tests objective. Copies may be obtained from the Bureau of Publications, Teachers College, Columbia University.

Minnesota Scale Beta. This is a slightly modified form of Thorndike's Scale Alpha, described in the above paragraph, but it is printed in a form which is more convenient to use. The scale also has the advantage of being printed in two forms which are approximately equivalent in value. Address Bureau of Coöperative Research, University of Minnesota, Minneapolis, Minn.

Price of test, 75 cents per hundred; class record sheet, 1½ cents per copy; directions, 2 cents per copy.

Thorndike's Visual Vocabulary Scale Alpha. This test consists of a carefully graded series of words which the pupil is asked to define in general terms. It may be used in grades 3 to 8, inclusive. The administration of the test is reasonably simple. Complete directions and a record sheet have been devised by the Bureau of Educational Measurements and Standards, Emporia, Kan. Copies of the scale may be obtained from the above address.

This vocabulary test forms a very useful supplement to a silent reading test. It is recommended that it be used especially when silent reading scores are low.

Price, including complete directions and record sheets, 50 cents per one hundred; postage extra, 9 cents per one hundred.

ORAL READING.

Gray's Oral Reading Test. This test consists of a series of carefully standardized paragraphs arranged in the order of increasing difficulty. The pupil's ability to read orally is determined by noting his rate of reading and the number of errors. The administration of the test is complicated, and only one pupil can be tested at a time. The test was used in the survey of the Cleveland public schools. Copies may be obtained from William S. Gray, School of Education, University of Chicago, Chicago, Ill. Reference: Charles H. Judd, *Measuring the Work of the Public Schools*, Cleveland Foundation, Cleveland, Ohio.

Price, including directions and record sheets, \$1 per hundred.

SPELLING.

The Ayres Spelling Scale. This scale gives a list of the 1,000 most common words and the standards for each grade. The scale itself is not a measuring device, but rather a list of words from which the teacher may choose words in constructing a test. Copies may be obtained from the Bureau of Educational Measurements and Standards.

Price, 5 cents, postage extra, 1 cent per copy.

A Timed Sentence Spelling Test. A timed sentence spelling test has been devised by the Bureau of Educational Measurements and Standards. Investigation has shown that pupils misspell words in the written work of the school which they spell correctly when they are dictated in the spelling class. This is because in written expression the spelling of the words used must be done with a minimum of attention and at the pupil's normal rate of writing. In this test the test words have been embedded in sentences which have been arranged so that pupils will write their normal rate. The normal rate of writing was determined upon the basis of measurements of the handwriting speed of 6,000 Kansas school children. These tests may be obtained from the Bureau of Educational Measurements and Standards, Emporia, Kan. Until the first edition of the test is exhausted, copies will be sent free of charge to teachers and superintendents in Kansas who will cooperate by sending their scores to the Bureau of Educational Measurements and Standards.

Teaching Spelling by Plays and Games contains a course of study for grades 2 to 8 based on the Ayres Scale, with provisions for the teaching of such additional words as the children need. Also full directions for the use of games for spelling drill and for developing skill in the use of a dictionary. It also provides a series of standard tests for measuring the effect of the drill work and a list of important articles dealing with the experimental study of spelling. Those who are interested in the motivation of children's work and the elimination of unessential material ought to send for a copy of this booklet.

Price, paper, 48 pages, 35 cents; postage extra. Address Courtis' Standard Research Tests, 82 Eliot street, Detroit, Mich.

GEOGRAPHY AND AMERICAN HISTORY.

Frequently inquiries are received concerning tests for Geography and American History. The tests described below have been devised recently and are worthy of a trial by those who are interested in these subjects.

Hahn-Lackey Geography Scale. This scale consists of several hundred geographical questions which were found to be common to six modern texts and which satisfied certain other criteria. These questions have been classified according to difficulty. In appearance the scale is very much like the Ayres Spelling Scale and is to be used the same way. Address H. H. Hahn, Wayne State Normal School, Wayne, Neb.

Price, 7 cents per copy.

Starch's Geography Tests, Series A. The common elements of five geography texts have been arranged in five parallel tests. The exercises of the tests are in the form of mutilated sentences. Address Daniel Starch, University of Wisconsin, Madison, Wis.

Price, 2 cents per copy.

Harlan's Test of Information in American History. This is a test of historical information based upon the study of Bagley and Rugg, "The Content of American History Tests." Address Chas. L. Harlan, College of Education, University of Minnesota, Minneapolis, Minn.

Starch's American History Tests, Series A. This test is based upon the facts and principles common to five modern texts. The exercises are in the form of mutilated sentences. Four duplicate forms are available. Address Daniel Starch, University of Wisconsin, Madison, Wis.

Price, 2 cents per copy.

STANDARDIZED TESTS FOR USE IN THE HIGH SCHOOL.

Tests are available for only a few high-school subjects, and in the case of those which are available there is not very much evidence to indicate the significance of the results obtained. Only a few are described here.

Several of the tests designed for use in the elementary school have been used in the high school. When this is done it should be remembered that the tests are being used for a purpose for which they were not designed.

Monroe's Standard Research Tests in Algebra. These consist of a series of six tests. The first five are based upon the operations which are required to solve a simple equation containing fractions, each test being devoted to a single operation. The sixth test is designed to measure the abilities of pupils to solve simple equations. These tests have been standardized on the basis of more than 2,000 scores. Complete directions and record sheets accompany these tests. Copies may be secured from the Bureau of Educational Measurements and Standards, Emporia, Kan.

Price for the set of six tests, including complete directions and record sheets, \$1.40 per 100 copies; in quantities less than 100, 1½ cents per copy; postage extra, 28 cents per 100.

Standardized Tests in First-year Algebra, devised by H. O. Rugg and J. R. Clark. This is an elaborate series of sixteen tests. Each test is limited to exercises of one type. Complete directions and tabulation sheets are furnished with the tests. Copies can be obtained from H. O. Rugg, School of Education, University of Chicago, Chicago, Ill.

Henmon's Latin Tests. Prof. V. A. C. Henmon has constructed a series of vocabulary and translation tests for Latin. Considerable care was exercised in devising these tests, and they give promise of being worth while. Copies may be obtained from V. A. C. Henmon, University of Wisconsin, Madison, Wis.

Kansas Silent Reading Test, No. III. This test is designed to measure the ability of high-school students to read silently. Copies may be obtained from the Bureau of Educational Measurements and Standards, Emporia, Kan.

Price 50 cents for 100; postage extra, 9 cents per 100 copies.

Monroe's Standardized Silent Reading Test, No. III. This test is designed to measure silent reading ability in high-school pupils.

Price, including directions, 50 cents per 100; postage extra, 9 cents per 100.

BIBLIOGRAPHY.

For the benefit of those who may desire additional information concerning educational measurements, the following very carefully selected bibliography is given:

GENERAL.

Judd, Charles H. Measuring the Work of the Public Schools. Published by the Russell Sage Foundation, New York City.

This is a partial report of the survey of Cleveland public schools. One will find it very helpful as it illustrates methods of handling scores as well as interpretation of tabulations.

The Measurement of Educational Products. The Seventeenth Year Book of the National Association for the Study of Education, Part Two. Public School Publishing Company, Bloomington, Ill.

This is a compilation of a body of very valuable information. In it will be found the most complete bibliography on the subject of educational measurements which has yet been assembled.

Monroe, Walter S. Educational Tests and Measurements. Published by Houghton Mifflin Company.

This is the best single account in this field. A large number of educational tests are described and illustrated, standards are given, directions for diagnosis are explained, and suggestions are given for remedial instruction.

Terman, L. M. Measurement of Intelligence. Published by Houghton Mifflin Company.

This is a simple description of the use of Stanford Revision of the Binet Scale.

ARITHMETIC.

Counts, G. S. Arithmetic Tests and Studies in the Psychology of Arithmetic. Supplementary Educational Monographs, 1, No. 4; August 27, 1917; p. 125. University of Chicago Press, Chicago, Ill.

This monograph contains an account of the derivation and use of the Cleveland Survey Tests in Cleveland and Grand Rapids. The chapter on Types of Errors is especially valuable.

Courtis, S. S. Third, Fourth and Fifth Annual Accounting of the Courtis Standard Research Tests, 1913-1916; also, Capacity, Ability and Performance in Relation to Standard Scores and Summary of Tabulations. Bulletin No. 4, Department of Coöperative Research, Detroit, Mich., p. 111.

Monroe, W. S. An Experimental and Analytical Study of Woody's Arithmetic Scales, Series B. School and Society, 6; October 6, 1917; 412-420.

It is shown in this article that Woody's Arithmetic Scales are of doubtful value for the measurement and diagnosis of arithmetical abilities.

Smith, J. H. Individual Variations in Arithmetic. Elementary School Journal, 17; November, 1916; 195-200.

Uhl, W. L. The Use of Standardized Materials in Arithmetic for Diagnosing Pupils' Methods of Work. Elementary School Journal, 18; November, 1917; 215.

The articles by Smith and Uhl deal with diagnosis.

ENGLISH GRAMMAR.

Charters, W. W. Minimal Essentials in Elementary Language and Grammar. Sixteenth Yearbook of the National Society for the Study of Education, Part I, 1917; 85-110. Public School Publishing Company, Bloomington, Ill.

This is a summary of the experimental work which has been done on the determination of the minimal essentials in elementary language and grammar.

HANDWRITING

Freeman, F. N. The Teaching of Handwriting. Houghton Mifflin Company, Boston, Mass., 1914.

The use of Freeman's Handwriting Scale is described in this monograph. In addition, valuable suggestions for teaching handwriting will be found.

READING.

Kelly, F. J. The Kansas Silent Reading Tests. Journal of Educational Psychology, 7; February, 1916; 63-80.

This is an account of the derivation of the Kansas Silent Reading Tests.

Monroe, W. S. A Report of the Use of the Kansas Silent Reading Tests with Over One Hundred Thousand Children. Journal of Educational Psychology, 8; 1917.

Monroe, W. S. Monroe's Standardized Silent Reading Tests. Journal of Educational Psychology; June, 1918.

This is an account of the derivation of Monroe's Standardized Silent Reading Tests.

Thorndike, E. L. An Improved Scale for Measuring Ability in Reading. Teachers' College Record, 16, November, 1915; and 17, January 1916; 40-67.

This is an account of the derivation of Thorndike's Scale Alpha for measuring the understanding of sentences.

Thorndike, E. L. Measurement of Achievement in Reading: Word Knowledge. Teachers' College Record, 17; November, 1916; 430-454.

This is an account of the derivation of Thorndike's Visual Vocabulary Scale Alpha.

Thorndike, E. L. Reading as Reasoning: A Study of Mistakes in Paragraph Reading. Journal of Educational Psychology, 8; June, 1917; 323-332.

Thorndike, E. L. The Understanding of Sentences: A Study of Errors in Reading. Elementary School Journal, 18; October, 1917; 98-114.

The above two references contain an account of the analysis of silent reading ability and for remedying difficulties revealed.

Uhl, W. L. The Use of the Results of Reading Tests as a Basis for Planning Remedial Work. Elementary School Journal, 17; December, 1916; 266-75.

Zirbes, Laura. Diagnostic Measurement as a Basis for Procedure. Elementary School Journal, March, 1918.

SPELLING.

Kallom, Arthur W. Some Causes of Misspellings. Journal of Educational Psychology. October, 1917.

PUBLICATIONS BY THE BUREAU OF EDUCATIONAL
MEASUREMENTS AND STANDARDS.

Bulletin No. 2. Study No. 1. Report of a survey of the public schools of Leavenworth, Kansas.

Bulletin No. 6. The Cost of Instruction in Kansas High Schools, by Walter S. Monroe.

Bulletin No. 7. Study No. 3. The Kansas Silent Reading Test, by F. J. Kelly. (Out of print.)

Bulletin No. 8. Study No. 4. A Report of the Use of the Courtis Standard Research Tests in Arithmetic in Twenty-four Cities, by Walter S. Monroe.

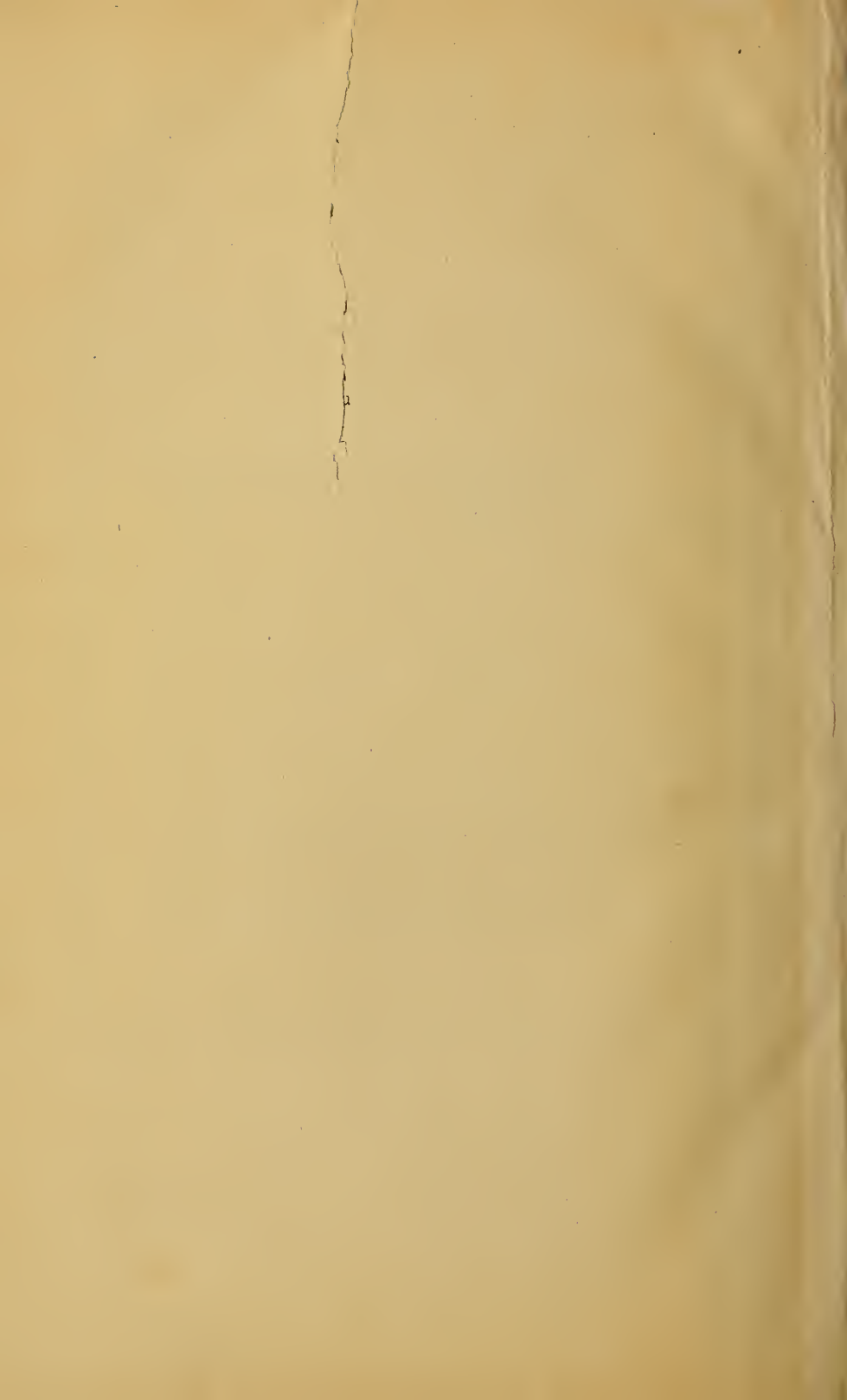
Study No. 5. A Teacher's Handbook of Educational Measurements. This manual gives complete directions for the interpretation of scores and suggestions for remedial instructions in reading, writing and arithmetic.

Study No. 7. Fourth Annual Report, 1917-'18. (In preparation.)

Copies of these bulletins will be sent free to superintendents, teachers, and other interested persons upon application. Address

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“Whatever exists at all exists in some amount. To know it thoroughly involves knowing its quantity as well as its quality. Education is concerned with changes in human beings; a change is a difference between two conditions produced by it—things made, words spoken, acts performed, and the like. To measure any of these products means to define its amount in some way so that competent persons will know how large it is, better than they would without measurement. To measure a product well means so to define its amount that competent persons will know how large it is, with some precision, and that this knowledge may be conveniently recorded and used. This is the general *credo* of those who, in the last decade, have been busy trying to extend and improve measurements of educational products.”—EDWARD L. THORNDIKE, Professor of Educational Psychology, Teachers College, Columbia University, in *The Seventeenth Yearbook of the National Society for the Study of Education*, Part II, p. 16.



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