A STUDY
OF
THE PROMOTION AND THE CLASSIFICATION OF PUPILS
IN
THE ELEMENTARY SCHOOLS
LINCOLN KANSAS
BY

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CHAPTER I

INTRODUCTION

In the early days of the American school there were no grades. Schools were like the present one-room rural schools. In cities large rooms were provided in which several hundred children might be brought together under one teacher with a number of monitors or assistants.

In the middle of the nineteenth century the idea of the graded school began to be expressed. This was particularly true in New England. Horace Mann spoke enthusiastically and frequently on the merits of the graded school. Some of his arguments are the very arguments which are now used for a much more accurate adjustment of the school to the pupil than the graded system ever permitted. It was believed that if one did no more than divide a school into eight or ten levels or grades, one could bring together pupils of the same ability. It was predicted that in a graded school the teacher of a grade would have to adopt but one method because the abilities of the children would all be the same. Reduction in effort, increase in efficiency, greater progress of pupils, and diminished cost of education were suggested as the probable results of adopting the graded system.

The graded system was adopted and was a milestone in the long road over which the American school has traveled. In its implications, if not in its actual work, it had in it all the things which Horace Mann saw. But the graded system began to harden. It lost the flexibility which it might have carried over from the ungraded system; instead of facilitating the progress of pupils it often hindered it. It brought with it the promotion system and the "lock step" of the grades.

As the graded system has developed, each grade has come to be thought of as a level of ability. The New England leaders seemed to think the pupils in a grade would be of about the same ability; and the teachers, despite the evidence of their own experience have continued to act as if they were. According to the usual idea, promotion is a certification that a child has successfully done the work of the previous grade.

Children in each grade are not of equal ability. As a matter of fact the assumption concerning the grades of the elementary school is not true. The pupils in them are not of the same ability. The evidence on this point is quite conclusive. This may be proved not only from educational literature but from every schoolhouse in the land. It is quite the usual thing for the pupils taught as a grade by one teacher to differ in mental age by four or five years. If proper adjustments were made, each of these years of difference ought to correspond to a differ-

ence of one grade. Yet all these pupils are in the same grade. The same thing is true in respect to chronological age. You will find ten-year olds, for example, in the first grade and you will find them in the eighth grade.

In achievement the range of individual difference within a given grade is likewise astonishingly wide. It has been said that in a given subject we can ordinarily take the best one-fifth of the pupils in a given grade, advance them to the next grade higher, and replace them with the poorest one-fifth of the pupils in the higher grade without changing the average ability of either grade.

Thus the graded system has failed to realize the purpose of its early advocates. It has broken down in the sense that it has failed to bring together pupils of like ability.

Classification is any arrangement of pupils which seeks to bring them together so that they may be instructed with the greatest benefit to each of them. It is an attempt to realize in the light of present knowledge and through present methods the benefits which in an earlier day were expected from the graded system. The chief opponents of reclassification are the teachers themselves. Many investigators have pointed out the reluctance of classroom teachers to permit children to be promoted or "skipped". McCall[12]*

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* The index figure appearing after references gives the numerical order of the reference in the bibliography.

notes this in his book on How to Measure in Education. "Teachers do not like to lose their good pupils, and it is of course the best pupils who are candidates for promotion". The argument is also advanced that a child promoted at other than the regular time of promotion, or a child who is permitted to skip a grade will have gaps in his information. Experiments have shown this to be untrue.

The fears on the part of teachers that pupils will not really profit by rapid advancement have so often been proven to be groundless that it is a wonder they have not been dropped. One investigator after another, bears testimony to the effect that when bright pupils have been given extra promotion they have made good in the grade to which they were promoted.

Experiments have shown that regrading or reclassification is considerably more frequent in the lower than in the upper grades. The Ohio Classification Committee report shows that the greatest amount of regrading was in the fourth grade. There was nearly as much, however, in the first, second and third grades, and the amount in the fifth grade was still considerable. Two-thirds of all the reported readjustments of this kind were in the first half of the eight-year elementary school.

Teacher's judgments of intelligence, proficiency and industry are the most frequently used basis of classification

at the present time. The superiority of the results of intelligence tests for this purpose has been strikingly exhibited by several writers.

Pressey, S. L. and L. C.[18] report two investigations, one dealing with sixth and seventh grade pupils, the other with first-grade pupils. The pupils in the sixth and seventh grades had been sectioned according to teacher's judgments. On the basis of intelligence tests certain pupils in the slow sections made high scores and were transferred to fast sections. Those in fast sections who did poorest in the tests were transferred to slow sections. Eight out of ten pupils thus transferred to fast sections made good, and eight out of ten who were put in slow sections were retained in those sections the next year.

The second investigation reported by the Pressys tells of the giving of intelligence tests to the pupils entering the first grade and the division of the classes into two groups. The pupils were not actually divided into groups except on paper. At the end of the first month of school the teachers divided their pupils into two sections on the basis of their judgments. According to the marks given the pupils at the end of the semester, the test grouping was superior to the grouping made according to the teachers estimates in twelve out of thirteen sections concerned in the investigations.

The conclusion of most writers on this subject seems to be clear. It is that wherever possible the estimates of teachers should be supplemented by the results of testing.

The graded system was a great advance over the ungraded system, but its benefits have only been partly secured because as a system it has become rigid. It is an administrative device rather than an instructional force.

The purpose of classifying and grouping pupils is to bring together those who may be instructed in groups with the maximum of individual benefit.

In the work of reclassification of the pupils in the Lincoln Schools, it was necessary to examine a great many kinds of intelligence tests as well as achievement tests in order to determine the test best fitted to this particular school. It was also essential to get tests which would give as much information as possible about the pupils to be classified, at the same time tests which could be given without too great an expenditure of time and money. The Otis Group Intelligence Test was finally chosen as the proper Intelligence test to use.

In looking over the related literature the writer was influenced toward using the Otis Group Test, by the results obtained from its use in an experiment on reclassification of the pupils in the Lawrence Public Schools in 1921.

Quoting from a Thesis written in 1921 by Ellen Grace Greenwood[8] "The specific effects of the classification upon the school system in Lawrence have been positive and show that the Otis Tests have proved a valuable supervisory device in the Lawrence reclassification. Furthermore, children who were classified upon the basis of the Otis scores did a better quality of school work as was shown by both teachers' marks and teachers' judgments. The better quality of school work produced throughout the school system after classification is an unquestionable proof that the Otis test is a much better basis for reclassification than the one formerly in use--that of teachers' marks."

The Otis Test may be administered with very little difficulty and it is a test which children enjoy taking. The test is easily scored and the results easily tabulated. In the Lawrence experiment the work of giving the test, scoring and reclassification was all complete in about a month's time.

"Group Intelligence Tests may be used as a basis of classification when they are administered intelligently, purposefully and with the cooperation of the teaching force." In the Lawrence reclassification a very large per cent of the pupils promoted made excellent grades. These pupils were given special promotion after being given the Otis test. These results prove that the Otis test succeeds in

picking out the children of very superior intelligence or those whose ability warrants special promotion. Since ninety-five per cent of the children who received special promotion made good, the value of the Otis test in reclassification seems to be verified.

A school system should be classified upon the basis of mental age rather than upon the intelligence quotient for the latter is only a measure of relative brightness while the former is a measure of mental maturity. Similarity of mental ability in classes then is only guaranteed by securing a greater similarity of mental ages in such classes. The older a child is in a given grade the lower his IQ, thus intelligence quotients and chronological ages are related inversely. Since it has been shown that the youngest children in each grade make the highest intelligence scores, teachers can no longer use the old method of chronological age promotion without doing a great injustice to the children of superior intelligence, who are found to be the real retardates of the conventional lock-step school system.

The problem of retardation of children of both low and high intelligence can largely be solved by grouping all children according to mental age in order that they may progress normally, according to ability. This grouping of children on the basis of mental maturity, rather than on chronological age can be accomplished only by

the use of reliable intelligence tests, either group or individual. This should be supplemented by the use of achievement tests.

The classification of children according to mental capacity is the most significant administrative problem today. No child can do his best work in a class in which the whole range of mentality exists. The Lawrence experiment showed that the mental maturity within classes ranged from a mental age of below 8 to a mental age of 18. Thorndike[25] states, "that on the basis of psychological tests in a given class the variation is such that some pupils in the grade do four or five times as much work as others in a given time, or do the same amount with a far smaller proportion of errors, or do successfully tasks which others cannot master." Later experiments have shown that the performance ability at the upper end of the range was as much as ten times that at the lower end. All intelligence tests show the enormous differences in intelligence which obtains for any unselected group of children of a given age.

The Otis Test revealed in the Lawrence experiment that while the youngest child in the fourth grade, age 7, made an intelligence score of 51, the oldest child in the grade, age 14, made a score of 26. Terman's[24] experiments on the use of intelligence tests in the educational guidance of high school pupils, reveal individual differences in mental age from 12 years 8 months to 19 years, and in chronological age from 13 years 1 month to 19 years 3 months.

Such facts as these prove without doubt that grade placement cannot be reliably made upon chronological age, or without reference to the mental ability of the school child. Investigations have shown, quoting from Terman "that the resulting classification of children has been so far from successful that, generally speaking, the lowest 20 or 25 per cent of pupils in any grade belong mentally in a lower grade, and the highest 20 or 25 per cent in a higher grade. Only the middle 50 or 60 per cent are classified approximately where they should be. Usually more than 15 per cent of the pupils are at least two grades removed from the one in which they belong by mental age." Thorndike has pointed out that "even in the most progressive cities the school population is not even approximately divided into groups of similar mental ability or capacity to do the work of the particular grade."

The school problem which is every where prevalent because of the wide range of individual differences, challenges school administrators to classify their school systems upon the basis of intelligence tests. Grade placements and grade promotion should be made on the basis of the child's ability to meet the requirements of the next higher grade. This fact has been lost sight of in school room practice. Dull children are usually found one to three grades above that warranted by their mentality;

while bright children are generally found from one to three grades below the location where their mentality would place them. This condition reveals that ordinarily, teaching procedure does not detect and properly estimate mental ability, and that schools miserably fail in grading according to mentality.

Children cannot be successfully classified on the basis of teachers' estimate of intelligence. Some schools today have the idea that the classification on the basis of the teachers' judgment of intelligence is as reliable as the classifications made by the use of intelligence tests. There are many fallacies in this assumption. First, it has been shown that the intelligence of retarded children is usually over estimated by teachers, and that the intelligence of superior children is underestimated. Second, even though some teachers may detect superior ability it is with reluctance that they promote the child. Third, Intelligence has been judged by teachers on the basis of school performance rather than upon the grade in which the child should, according to his chronological age, be doing satisfactory work. Intelligence can be adequately judged only by the quality of work done in the grade that is normal to the child's age. Fourth, teachers are likely to err in judging the intelligence of children coming from the poorer homes, who by the conditions of their environment are naturally timid and shy and cannot make the response

or showing that the less intelligent children can, who are very talkative, cunning and active. Fifth, teachers' judgments of intelligence are not reliable because they have no standard for normal intelligence and no scientific methods of judging intelligence.

The day has come when objective mental testing is taking the place of the subjective estimates of teachers. To be of most value to both the child and the school these tests should be given to all children upon their first entrance into the school. This early classification on the basis of mentality is desirable in order that those children of marked ability may be selected for rapid advancement and those of low grade mentality may be early segregated. In the past it has been the mentally defective child that has been given the special attention in ungraded rooms, and an undue amount of time and money has been expended upon them.

Munroe[4] has said, "the tendency in our schools is to devote more attention to the subnormal or the mediocre than to the supernormal." Group tests supplemented by individual tests makes it possible for school administrators to place every child in the school system where his ability warrants. When children are thus correctly placed and grouped, school work can be more satisfactorily adapted to the needs of the pupil; and as a result, he can work more freely, happily, contentedly and at a rate normal with his ability.

The intelligence test by providing a scientific basis for grade placement will also largely enable the supervisor to solve his retardation problem. Retardation, which is an alarming problem in many schools, can partly be explained by the fact the children have not been placed where they can work with a maximum of efficiency. Children of unequal ability cannot work together successfully. Those of less ability become laggards in the class and as a result soon become retarded. The retardation of such children becomes greater each successive year until they drop out of school. This retardation can be materially lessened by grouping children in each grade according to ability, so that school work may be adapted to the various abilities. Such a procedure makes it possible for the less intelligent children to make normal age-grade progress in their group, and prevents the clogging of the lower grades with over-age and dull pupils. Furthermore, this prevents the holding back of superior children, who are usually retarded below the grade which their ability warrants.

The democratic school system, today must classify and group all children according to mental maturity. The group intelligence test is the only device by which this can be effectively accomplished. This in conjunction with some achievement test taken along with teachers marks makes a suitable method of reclassification.

The Otis Group Intelligence Scale was devised to measure the native mental ability of any individual whether child or adult, who has had the equivalent of three or four years of schooling. According to Terman[23] "it was the first scientifically grounded and satisfactory scale for testing subjects in groups." Through this scale Otis has done much to free intelligence tests from the influence of the personal equation of the examiner.

The Otis Test cannot take the place of the Binet or other methods of individual examination, for the two methods supplement each other. The group test will serve as a basis for the general classification of children above the fourth grade, while the individual test will be necessary to place all exceptional or puzzling cases. The Otis Group Test, Primary Examination, is among the best in classifying pupils in the first four grades.

The movement to measure, more scientifically, educational products began about two decades ago. It was of necessity to a great extent, theoretical. The elementary school was the field around which the educational yard stick was first placed. It is only since the World War that the newer methods of objective Measurements have been generally used in the secondary schools and the institutions of higher learning.

In 1924, the Holton Kansas High School challenged the Sabetha Kansas High School to a dual scholarship contest

in American History. This was the first dual scholarship contest. These tests were prepared and furnished by the Kansas State Teachers College of Emporia, Kansas.

In 1926, the Kansas State Teachers College of Emporia brought this group contest idea, worked out on a larger scale, before the high schools of Kansas. The tests are constructed under the supervision of the Bureau of Educational Measurements and Standards at the State Teachers College. In 1926, tests in eighteen subjects were prepared for these contests. More than 65,000 pupils in 687 schools participated in these contests. More than 53 per cent of the schools sent reports to the Bureau of Measurements from which a summary report was made and sent to the participating schools for comparison purposes. The interest in the 1927 contest increased the number that took part to more than double that of 1926. There were more than 143,000 students who took part in the two contests of January eleventh and March fifteenth in 1927. Since that time the Bureau of Measurements has added tests in all of the elementary school subjects and the contest among pupils of the elementary schools is carried on in the same manner as that of the high school tests. In the first three grades the tests are worked out in group tests and is known as The Primary Achievement Test. This test is worked out on practically the same basis as a regular standardized achievement

test. In grades four to six inclusive the tests are arranged for each of the several subjects given in these grades.

A small charge is made for the tests to take care of the expense of conducting the contests. The tests cost two cents per copy, the report sheet one cent per copy and the general directions one cent per copy.

In these contests every member of the class takes part. The class accomplishment is determined by the mid-score. In this way a school is competing with all the schools that report on the test.

The tests are given as a regular examination in the classrooms. They are given in all schools on the same day and scored under the direction of the Superintendent or Principal. General directions and keys for scoring accompany the tests. The tests are administered in 30 minutes and are so constructed that the scoring is objective and is quickly done.

There is only one form of the tests, hence it is not possible to determine the reliability. So far as the writer knows, there has been no attempt to determine the validity of these tests. They are not standardized except in the administration and scoring of them.

In a study made by Le Grande'° in 1928 a comparison of the results obtained in the use of the dual scholarship contest was made with the results obtained in the Otis In-

telligence Tests. His conclusions were as follows: (1) "All correlations between the Dual Scholarship Tests scores and Otis scores are positive, and all except American History show marked relationship, the correlation between American History scores and Otis scores on the January and March tests were .33 and .19 respectively. (2) Correlations between English scores and Otis scores were the highest found. The range is from .54 to .76. (3) The correlations between the Dual Scholarship Contest scores and Otis scores in this study compare favorably with a majority of similar studies where standardized test results were employed to correlate with intelligence scores. (4) Results obtained in this study indicate that the Dual Scholarship Contest Examinations measure about the same thing that the Standardized Educational Tests measure."

Arthur I. Gates[7] summarized in a study he reported as follows: "Other things being equal the more verbal the material the higher the correlation with school attainment. When the individual group tests were arranged for the degree of verbalness, time being eliminated by the technique of partial correlation, the independent correlation (partial r first order) with achievement was .69. Verbalness being equal, the greater the length of the test the higher the correlation with achievement. The Stanford Test and the verbal group tests yield very nearly the same correlations

with particular school subjects, the former correlating relatively high with Arithmetic, the latter with Reading and Spelling."

A. H. McPhail[13] reports an experiment which was carried on in the grades. The National Intelligence Test Form A and the Lippincott-Chapman Test, in Arithmetic and Reading for grades 5 to 8 were used. For the lower grades Otis Primary Group Intelligence Scale and the Haggerty Reading examinations Sigma were used. McPhail reports the following findings: "A high coefficient of correlation was found between the National Intelligence Tests and scores on the Lippincott-Chapman Tests in Reading and Arithmetic. The number of pupils in each of the four grades ranged from 12 to 124 with an average of 45. Eighteen coefficients of correlations were computed by the rank difference method between these two tests, ranging from .45 to .88 with a median of .68. Two coefficients of .65 and .66 were found by the product moment formula and were based upon 106 and 124 cases respectively."

W. C. Eubank[5] states,"Mental tests have been constructed for the purpose of measuring general intelligence, and such tests are being used for educational purposes. That children vary in Mental ability is an accepted fact. The fact that children vary in achievement in school subjects is quite generally recognized."

Mental measurements have been primarily used for the purpose of grouping students into speed groups. If on the basis of mental test scores, educational achievement can be predicted, additional value shall have been found for the use of mental measurements in the instruction of children.

CHAPTER II

SPECIFIC FIELD OF THIS STUDY

This study includes 315 pupils of the Lincoln, Kansas Elementary Schools, grades 1 to 8 inclusive.

In making this study the following points were studied:-

(1) To show the present status of the pupils in the Lincoln Elementary Schools under the existing plan of classification. The pupils are now classified upon the basis of chronological age and the teacher's judgment. They are promoted by annual promotions. Under the present plan of classification each grade is divided into two sections, A and B, according to ability. The ability of the pupils is determined by the teacher's judgment. The only criterion used by the teacher is the pupil's ability to do the work required by the class. Age, mental ability or physical fitness are not taken into consideration in making promotions.

(2) To show the wide range of mental ability existing between the pupils in each grade as they are now classified.

(3) To work out a plan of classification based upon mental maturity, achievement in school subjects and physical fitness to do the work of a given grade.

(4) To show that intelligence and achievement test results, chronological age and physical fitness should all be considered in the classification of pupils.

(5) To show that the present plan of classification is very unsatisfactory, (a) because it does not provide for the wide range in mental ability found in the same grade; (b) it does not take care of the exceptionally bright pupil or the exceptionally dull pupil; (c) it does not consider physical fitness to do work of a given grade.

(6) To reclassify the pupils under the suggested plan of classification.

(7) To show that under the suggested plan of classification, it is possible to group the students within each grade according to their mental ability, and thus provide a greater chance of normal progress of all pupils.

CHAPTER III

METHOD OF SECURING DATA AND METHOD OF PROCEDURE

The data for this study were secured from the intelligence tests and achievement tests given to the pupils in the Lincoln, Kansas Elementary Schools. Witham's Age-Grade Charts were used to show the status of the pupils under the existing form of classification.

The Otis Group Intelligence Scale, Primary Examination and Intermediate Examination Form A were administered to the 315 pupils of the Lincoln Schools in March, 1930. These intelligence tests were given and scored by the writer with the assistance of an instructor who had been trained in giving the tests. The instructions for giving and scoring the tests were followed as carefully as possible. All tests and the tabulated results were then checked by another instructor.

The achievement tests used in securing data for this study were the Elementary Scholarship Contest Examinations of the Kansas State Teachers College of Emporia. The

Elementary Scholarship Contest Examinations were administered in March, 1930. Great care was taken in the administration and scoring of these tests. The package of test material was not opened until the day of the examination, and then the instructors were not given access to the tests until the hour appointed for the examination. Two instructors were in each room during the testing period of all these tests. These papers were then graded by the writer with the assistance of an instructor and checked for possible errors by another instructor. Copies of all tests and the tabulated scores were then placed on file in the high school office. To make comparison between scores made by the pupils in the Lincoln Schools on these tests and the scores made by pupils in other schools on the same tests, it was necessary to know the results, with median score of all pupils who took the test. There were several thousand pupils who took these tests. This comparison was made by referring to a booklet compiled by the Teachers College of Emporia.

Witham's Age-Grade Progress Charts were filled out May, 1930, showing the number and per cent by grades of above normal, normal and below normal pupils.

With these data at hand, the writer proceeded to tabulate results as measured by the Otis Scores, and the Elementary School Contest Results, and to make comparison between scores made by pupils in the two contests. This was carried out by means of tables, graphs and charts.

CHAPTER IV

PRESENTATION OF DATA

The pupils in the Lincoln elementary schools are now classified upon the basis of chronological age and the teacher's marks. The mental maturity, physical fitness or determination to do good work are not considered.

Witham's Age-Grade Chart was used to show the pupils above normal, normal and below normal, in respect to chronological age. This shows the status of the pupils under the present system of classification.

The tables and charts following this are distribution of scores and IQ's obtained from the Otis Intelligence Tests given all the pupils included in this study.

A distribution of the achievement test scores by grades and subject are given to show the pupils ability to achieve in the different subjects. A comparison is made of the pupils IQ and achievement test scores. These were used to help in the reclassification of the different pupils.

Witham's Age-Grade Classification Chart showing the number and per cent of pupils above normal, normal and below normal on the basis of chronological age.

TABLE I

Age Sept. 1	I	II	III	IV	V	VI	VII	VIII	Total
5 yrs 8 mo									
6 yrs 8 mo	26	2							28
7 yrs 8 mo	18	21	4						43
8 yrs 8 mo	3	13	21						37
9 yrs 8 mo		2	18	14					34
10 yrs 8 mo			1	17	20	4			42
11 yrs 8 mo				2	17	15			34
12 yrs 8 mo				1	5	13	20		39
13 yrs 8 mo					1	4	12	16	33
14 yrs 8 mo						3	2	9	14
15 yrs 8 mo					1		3	5	9
16 yrs 8 mo								2	2
17 yrs 8 mo									
Total	47	38	44	34	44	39	37	32	315
									Per-cent
Above normal	0	2	4	0	0	4	4	0	3.17
Normal	44	34	39	31	37	28	32	25	85.70
Below normal	3	2	1	3	7	7	5	7	11.10

(Pupils were permitted to enter the first grade at 5 years and 8 months of age. This classification was made upon that basis. These figures were compiled May 14, 1930)

In table I the classification of the pupils in different grades from 1 to 8 is shown as they are now classified. "Witham's Age-Grade Classification Card" was used. The intent, in making this classification, was to discover the number of pupils in each grade who were, in regard to chronological age classified above normal, normal and below normal. This classification doesn't tell us anything about their mental status except that it indicates that as far as chronological age is concerned some are above normal and some are below normal. This table shows a greater per cent below normal than there are above normal. This may be explained by the fact that the unusually bright pupils finish the grades and enter high school while the laggards repeat grades and remain two or more years longer than it is necessary for the normal pupils to finish the grades. Where the pupils are classified upon the basis of chronological age alone there is a strong tendency for the over age pupils to accumulate in the fifth, sixth, seventh and eighth grades. This is true in the Lincoln Schools as the table shows. There are seven over age pupils in each of the fifth, sixth and eighth grades, and five in the seventh grade. There are only 10 pupils in the entire system who are above normal as far as chronological age is concerned. There are 35 who are below normal in respect to chronological age. If the pupils are classified upon the basis of chronological age alone, there are pupils in the normal group who are quite frequent-

ly retarded in respect to mental ability. The basis of the classification of the pupils should be determined by their mental maturity, physical ability and determination to do efficient work. Those pupils who are above normal in the Age-Grade Classification, with few exceptions are also above normal in mental maturity as shown by their scores on intelligence and achievement tests. The same is true of those below normal. There are some below normal whose score on intelligence and achievement tests indicate that they are capable of doing better work and are undoubtedly retarded mentally. These should have special promotion. There are also several pupils who are classified as normal from chronological age standpoint, who have high IQ's and high achievement scores. These would also receive special promotion. Experiments have shown that both superior and inferior pupils do much better work when grouped on the basis of their mental ability. If the classification of the pupils in the Lincoln Schools had been administered upon the basis of mental maturity and the grouping within grades done in like manner, all pupils would have done better work. The pupils who are now classified as below normal would have completed the grades in less time than they are now doing. Pupils who are not promoted, and who are forced to compete with pupils of superior mental ability, become discouraged and do not do the amount of work they are capable of doing. According to the present classification there are too many pupils below normal and not enough above normal.

In the first grade according to Witham's Age-Grade Classification there are three pupils below normal with IQ's 113, 104 and 101 and their achievement test scores were 22, 51 and 23 respectively. The median for the state in the achievement tests was 15. The median for the second grade in the same achievement test was 39. According to the IQ and the test score made by one of the pupils in the above case he should be promoted to the second grade; his achievement score was 51 which is above the state median for the second grade.

In the second grade the two pupils above normal in age had IQ's of 136 and 124. Their achievement test scores were 53 and 50. The state median for the second grade is 39 and for the third grade 64. The girl with an IQ of 136 and achievement of 53 should be given special promotion into the third grade. The boy with the IQ of 126 and achievement score of 50 should not be given special promotion. The teacher's judgment and the child's lack of application were the chief factors in making this decision. Those in the second grade who were classified as below normal had IQ's of 87 and 84 and made scores of 14 and 13 on the achievement tests. The IQ's were below normal and the achievement test scores were below the median for the first grade. These two pupils should be placed in an opportunity room.

In the third grade there are four pupils in this grade who are in the above normal group. Their IQ's are 135, 135, 132 and 115. Their achievement scores are 71, 70, 70 and

41. Three of these should receive special promotion to the A section of the fourth grade, as their IQ's and achievement test scores are very high. The fourth pupil should be given regular promotion. There is only one student in the grade below normal. His IQ is 106 and his achievement score is 49 which is a little below the state median. He should be given regular promotion. The health of this boy is interfering with his work.

The fourth grade has no pupils above normal but there are three below normal. Their IQ's are 92, 87 and 74 and their achievement test scores were in order of IQ's above,--Reading 24, 13, and 5; Spelling 21, 24, and 24; and Arithmetic 19, 2, and 5. The State Medians for these subjects are 19, 27, and 17. The first student is eligible for regular promotion and the next two should be retained in this grade or if it is possible to maintain an opportunity room these pupils will be placed in this room.

In the fifth grade there are no pupils above normal and 7 below normal as to chronological age classification. Their IQ's were 107, 97, 93, 89, 80, 75, and 60. Their achievement test scores were Reading 29, 32, 22, 23, 13, 22, and 18; Spelling 52, 38, 36, 34, 15, 24, and 32; Arithmetic 16, 17, 24, 21, 21, 18, and 21. The State Medians were Reading 23, Spelling 40 and Arithmetic 25. In making a comparison of the above IQ's and achievement test scores it seems expedient to

give regular promotion to the first three pupils as their IQ's are normal or above and their achievement test scores will average up to or above the state medians. Two of the remaining four should be retained in the same grade another year and the last two should be placed in the opportunity room, as their IQ's and achievement test scores show inferior mental development. The low achievement test score and the IQ of 60 is without doubt feebleminded.

The Sixth grade has four above normal according to the Age-Grade Classification Chart. Their IQ's are 122, 120, 98, and 84. Their achievement test scores are: Reading 35, 30, 16, and 20; Spelling 57, 48, 51, and 42; Arithmetic 28, 34, 29, and 22. The state medians for these subjects are: Reading 27, Spelling 48 and Arithmetic 31. The first pupil with an IQ of 122 should have special promotion. The next two pupils with IQ's of 120 and 98 should have regular promotion and the last one of the group would be retained in the grade as her IQ is normal but her achievement test scores are below the medians of the preceding grade.

Table showing age, IQ's and achievement scores of the 7 pupils in the 6th grade, classified below normal by Witham's Age-Grade Classification Chart.

TABLE II

Pupil	Age	IQ	Reading	Spelling	Arithmetic	Classification
1	14-2	91	30	59	22	Promoted to 7th
2	13-3	89	24	16	24	Retained (too near median of 5th)
3	13-4	88	24	31	25	Retain
4	13-3	85	23	51	30	Promote
5	13-3	78	17	23	21	Retain
6	14-5	78	21	62	30	Promote
7	14-11	72	20	36	33	Opportunity room (low IQ and test score)
State Median gd 6th			27	48	31	
State Median gd 5th			23	40	25	

Table II shows that of the 7 pupils below normal in this grade only one has an IQ of 90 or better. Their IQ's are as follows: 91, 89, 88, 85, 78, 78 and 72. Their achievement test scores are: Reading 30, 24, 24, 23, 17, 21 and 20; Spelling 59, 16, 31, 51, 23, 62 and 36; Arithmetic 22, 24, 25, 30, 21, 30 and 33. The state medians for these subjects in the sixth grade are Reading 27, Spelling 48 and Arithmetic 31. Table number II will give the best illustration of the disposition of these pupils. Three will be promoted, three retained, and one placed in the opportunity room due to the advanced age, very low IQ and the low test scores. This pupil is apparently feeble-minded.

Table showing ages, IQ's and achievement scores by subjects of pupils in the 7th and 8th grades who were classified below normal by Age-Grade Classification.

TABLE III

Pupil	Age	Gd	IQ	Hist	Arith	Read	Spell	Lang	Geog	Classification
No. 1	15	7	96	28	31	32	45	59	49	Promote
2	15	7	87	30	36	36	49	53	67	Promote
3	14	7	86	20	22	28	52	58	60	Promote
4	14	7	85	24	26	23	37	50	49	Retain
5	15	7	65	24	27	27	30	49	40	Opportunity Rm
6	15	8	89	27	32	25	61	61		Promote
7	15	8	89	34	30	30	58	57		Promote
8	15	8	87	34	42	31	53	43		Promote
9	16	8	84	26	29	18	44	57		Retain
10	16	8	84	25	26	29	54	51		Retain
11	15	8	78	31	18	32	28	58		Retain
12	15	8	78	29	37	26	35	49		Retain
Median 7th gd.				26	35	30	58	58	44	
Median 8th gd.				31	39	34	64	63		

The seventh and eighth grades had no pupils classified above normal according to the Age-Grade Classification, but there were 12 pupils classified below normal. Table number III lists those 12 pupils with their ages, IQ's and achievement scores. The state medians for the different subjects are given. By referring to Table III you will see that those pupils were retained in the same grade, who had low IQ's and test scores near the median of the preceding grade.

The Witham's Age-Grade Classification (Table I) shows that of the 315 pupils in the Lincoln Schools 10 pupils or 3.17 per cent are above normal, 270 or 85.70 per cent normal and 35 or 11.10 per cent are below normal. This classification alone, based upon chronological age, is unsatisfactory as the comparisons will show. When some other measures are used, such as the intelligence test, showing mental age or mental maturity, and the achievement test showing ability to achieve in different subjects, then the method of classification upon the basis of chronological age proves to be inefficient.

In the preceding tables no effort has been made to reclassify the pupils in the normal group or those classified by the Age-Grade Classification as normal. These pupils who show high IQ's and high test scores will be given special promotion. No demotions will be made.

Terman's Classification Based upon IQ's of pupils made on the Otis Intelligence Tests.

Table IV

Grades	Inferior	Dull	Normal	Superior	
	below 70	70-89	90-119	120 and above	Totals
1		1	31	15	47
2		2	18	18	38
3		2	30	12	44
4		5	26	3	34
5	1	13	24	6	44
6		8	27	4	39
7	1	3	29	4	37
8		10	21	1	32
Totals	2	44	206	63	315
Percent	.63%	13.97%	65.4%	20%	100%

Table number IV shows the distribution of the pupils in the Lincoln Schools according to Terman's Classification based upon the IQ's secured from the Otis Intelligence Tests. This table shows 2 pupils inferior or possibly classed as feeble minded, 44 pupils are dull, 206 normal and 63 superior.

In considering the percentage of pupils in each group, there are .63% of all the pupils inferior, 13.97% dull, 65.4% normal and 20% are superior. These percentages are reversed from the percentages obtained on the Witham's Age-Grade Classification where the classification is based upon chronological age alone. In the Age-Grade Classification, Table I, there were 3.17% superior or above normal, 85.73% normal and 11.1% below normal. The percentages secured from the IQ's would show that the present system of classification, based upon chronological age alone is not adequate to properly place the pupils.

There are some pupils whose IQ's are considerably above 120 but the preceding table does not show the extremes. There are many more who are very superior than there are of the feeble minded group. These groups will be shown in a later table.

The superior pupils seem to be grouped in the first three grades with the smallest number in the eighth grade. There are no pupils in the inferior group in the first three grades and only one dull pupil. This is perhaps a group of unusually bright pupils, as this would not hold

true in all schools. In some schools there are a larger number of inferior pupils in the lower grades than in the higher grades; but usually the inferior pupils are retained in the upper grades and the superior pupils are passed on, thus congregating the dull ones in the upper grades.

DISTRIBUTION OF IQ'S

OTIS INTELLIGENCE TEST PRIMARY EXAMINATION
GRADES I TO III INCLUSIVE

TABLE V

Scores	GRADES I	II	III	Totals
137-139				
134-136		2	3	5
131-133		2	1	3
128-130	4	0	1	5
125-127	4	3	1	8
122-124	4	6	2	12
119-121	4	7	6	17
116-118	5	2	5	12
113-115	6	4	8	18
110-112	5	4	8	17
107-109	2	1	1	4
104-106	5	1	3	9
101-103	3	2	0	5
98-100	1	0	3	4
95-97	0	1	0	1
92-94	3	1	0	4
89-91	0	0	0	0
86-88	1	1	1	3
83-85		1	0	1
80-82			1	1
77-79				
Totals	47	38	44	129

Table V shows the distribution of IQ's by grades from I to III inclusive. There were 5 pupils making scores between 134-136. These scores were in the second and third grades. The highest score in the first grade was between 128-130. The lowest score in these three grades was between 80 and 82. The range of scores increases from the first grade throughout the three grades, with the first grade IQ's grouping closer around the median score. There is a greater increase in range in the next two higher grades. Table V shows there are 50 of these pupils with an IQ of 120 or better with only 5 having an IQ below 90. These three grades are above the average grades in intelligence. A great majority of these pupils are of normal intelligence and there is also a large group of superior pupils. The writer does not know the reason for this; however, it quite often happens that an unusually bright group of pupils enter school at the same time, and continue through school in the same group. In the next five grades this is not true as Table VI will show. Table V will help to substantiate the fact that a system of classification based upon chronological age alone is unsatisfactory. There are several pupils in this group with an unusually high IQ. These pupils should have special promotion if their achievement test grades and physical condition warrant such promotion.

Table I, Witham's Age-Grade Chart, shows 6 pupils above normal in the first three grades. Table V shows the distri-

bution of IQ's with 50 pupils of an IQ of 120 or better. In the same tables there are 6 below normal in chronological age and 5 with IQ's below 90. It would seem that the system of classification based upon chronological age alone is able to properly classify the inferior pupil to a better advantage than it classified the superior pupil. Teachers seem to be slow to recognize merit, but recognize dullness more readily.

DISTRIBUTION OF IQ'S
OTIS INTELLIGENCE TEST INTERMEDIATE EXAMINATION
GRADES IV TO VIII INCLUSIVE

TABLE VI

Scores	GRADES IV	V	VI	VII	VIII	Totals
137-139		1				1
134-136		0				0
131-133		0	1			1
128-130		0	0			1
125-127	1	2	0	1		4
122-124	1	2	1	0		4
119-121	2	2	2	3	2	11
116-118	2	1	1	5	0	9
113-115	1	1	3	5	3	13
110-112	0	1	4	2	2	9
107-109	4	1	2	2	2	11
104-106	3	3	1	1	4	12
101-103	4	4	2	4	2	16
98-100	3	7	5	3	3	21
95-97	2	2	3	6	0	13
92-94	5	2	2	0	3	12
89-91	1	3	5	0	3	12
86-88	3	3	2	2	3	13
83-85	0	3	2	1	2	8
80-82	0	3	0	0	1	4
77-79	0	1	2	0	2	5
74-76	2	1	0	0		3
71-73	0	1	1	0		1
70 and below		1	0	1		2
TOTALS	34	44	39	37	32	186

Table VI shows the distribution of IQ's by grades from IV to VIII inclusive. The greatest range of scores is in the fifth grade. One pupil has an IQ of 59 and the highest IQ is 137. This grade has more pupils with IQ's above 120 than any other grade and it also has more pupils with IQ's below 90 than any other grade.

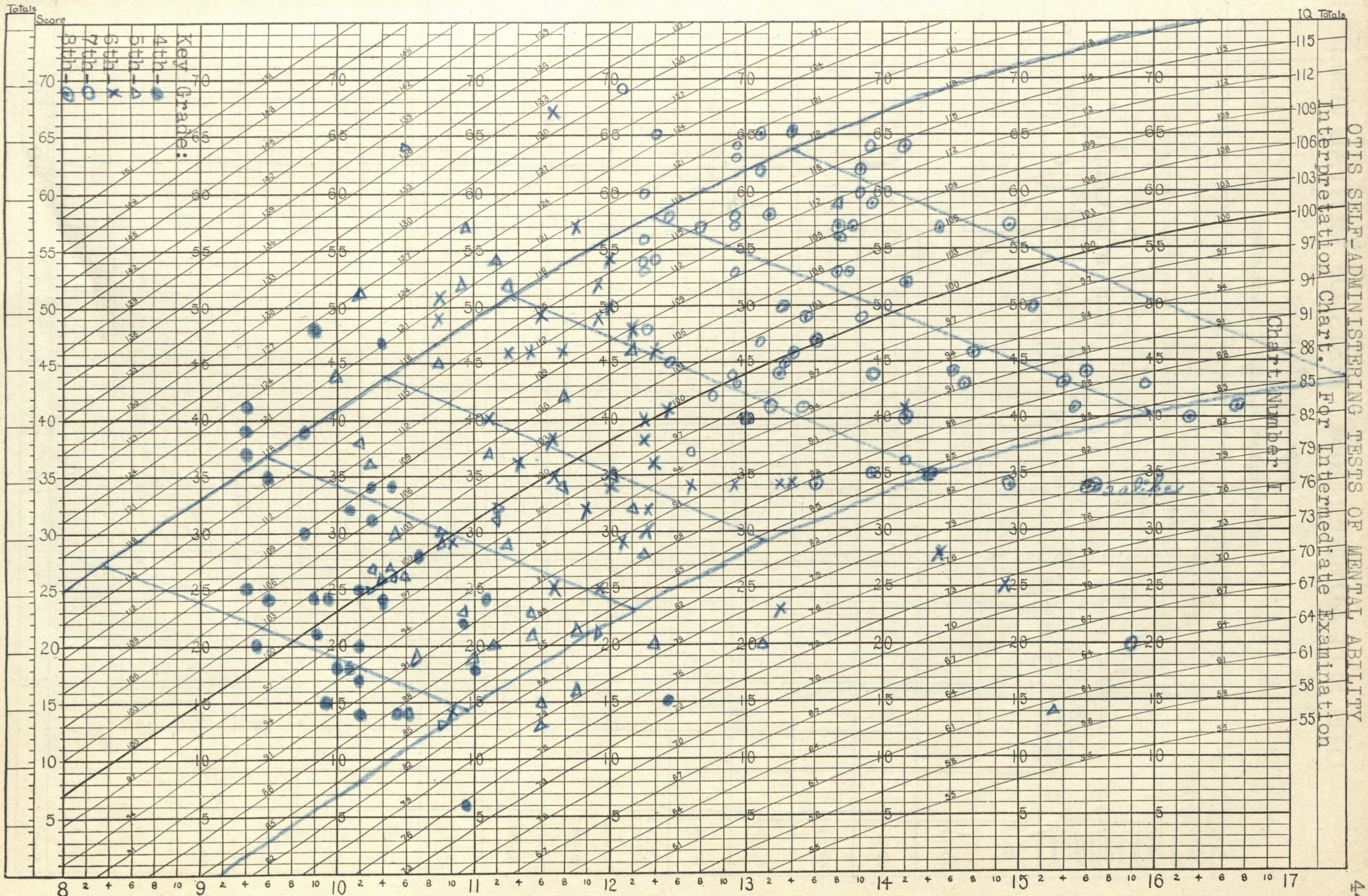
The eighth grade has the smallest range of IQ's of any of the grades. This grade has only 2 pupils with scores above 120 while it has 8 with IQ's below 90. This is due to the fact that the bright pupils have been passed on into high school and the dull pupils have been retained in this grade, thus accumulating a large number of pupils of low intelligence. These eventually drop out of school with very few of them entering high school. The majority of these who do enter high school drop out the first year.

Table VI showing IQ's has 22 pupils with IQ's above 120 or superior in intelligence and 36 with IQ's below 90 or below normal. Table I with classification based upon chronological age alone, shows 4 pupils above normal and 29 pupils below normal. This bears out the fact as pointed out on a previous page that inferiority is more easily recognized than superiority. Table I shows 4 pupils above normal and Table VI shows 22 above normal. The same tables list 29 and 36 below normal. These figures substantiate the fact that the pupils are unproperly classified under the present classification. The superior pupils are the ones who are receiving the greatest

injustice. In this study the pupils in the normal group with but few exceptions have been properly classified. A few have superior intelligence as indicated by their IQ's and achievement test scores. Some merit promotion while others do not have the determination to work sufficiently to warrant promotion.

INTERPRETATION CHART. For Intermediate Examination

Grades plotted ● 4th, △ 5th, × 6th, ⊙ 7th, ○ 8th Number 156 Form used A Time limit 30 min. Date ..... 19....



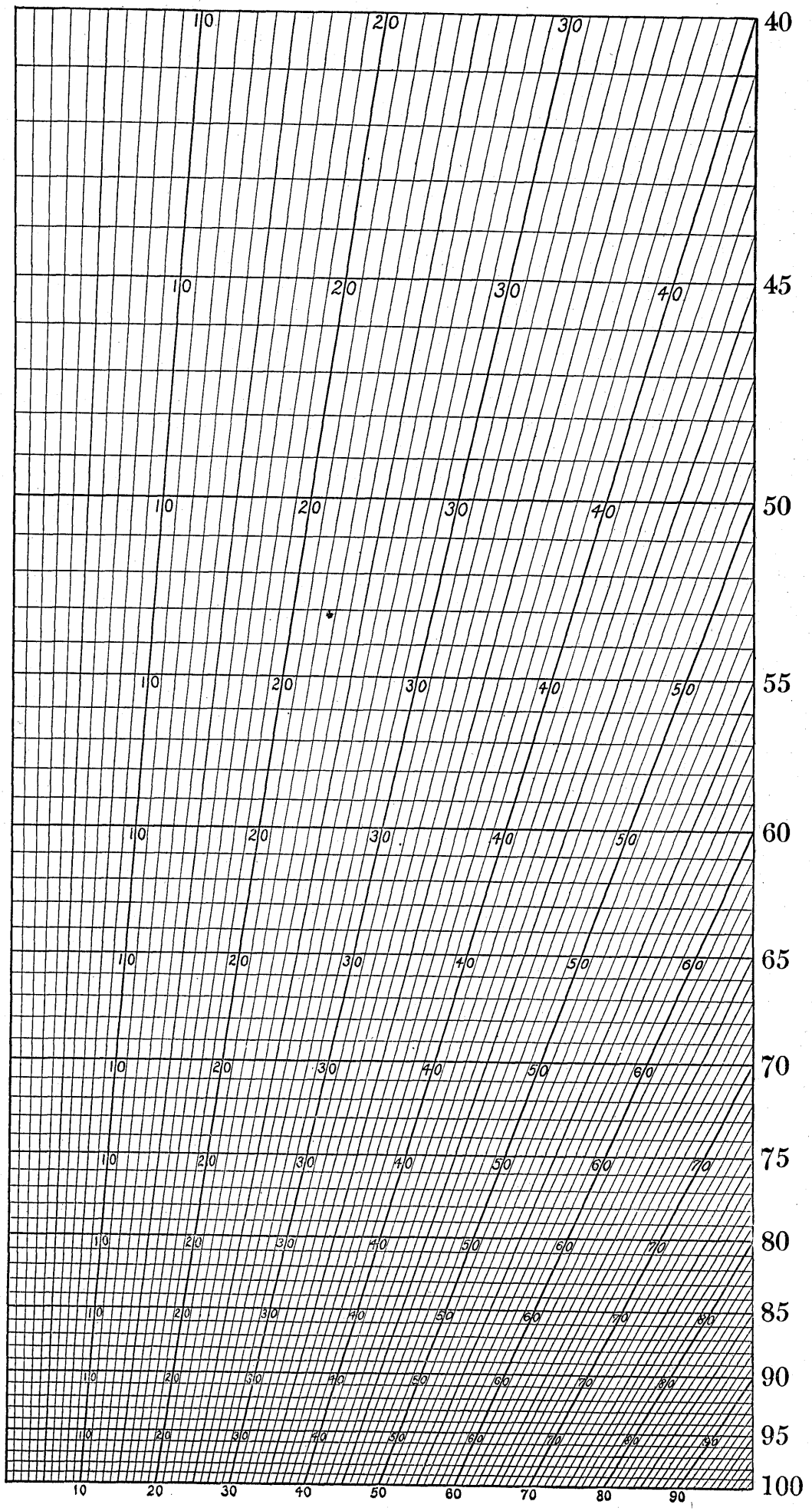
OTIS SELF-ADMINISTERING TESTS OF MENTAL ABILITY

PERCENTILE GRAPH

For Intermediate and Higher Examinations

Grade or Class							Examination	
Number							School or College	
Date of Exam.							Examiner	
Form Used							Percentile Graph	
Time Limit								
Score	Tallying	Sub-totals	Per cents	Tallying	Sub-totals	Per cents	0 10 20 30 40 50 60 70 80 90	
75							75	
70-74							70	
65-69							65	
60-64							60	
55-59							55	
50-54							50	
45-49							45	
40-44							40	
35-39							35	
30-34							30	
25-29							25	
20-24							20	
15-19							15	
10-14							10	
5-9							5	
0-4							0	
Class Medians							0 10 20 30 40 50 60 70 80 90	

SCALE CHART



OTIS SELF-ADMINISTERING TESTS OF MENTAL ABILITY

INTERPRETATION CHART. For Higher Examination

Classes plotted.....Number.....Form used.....Time limit.....min. Date.....19....

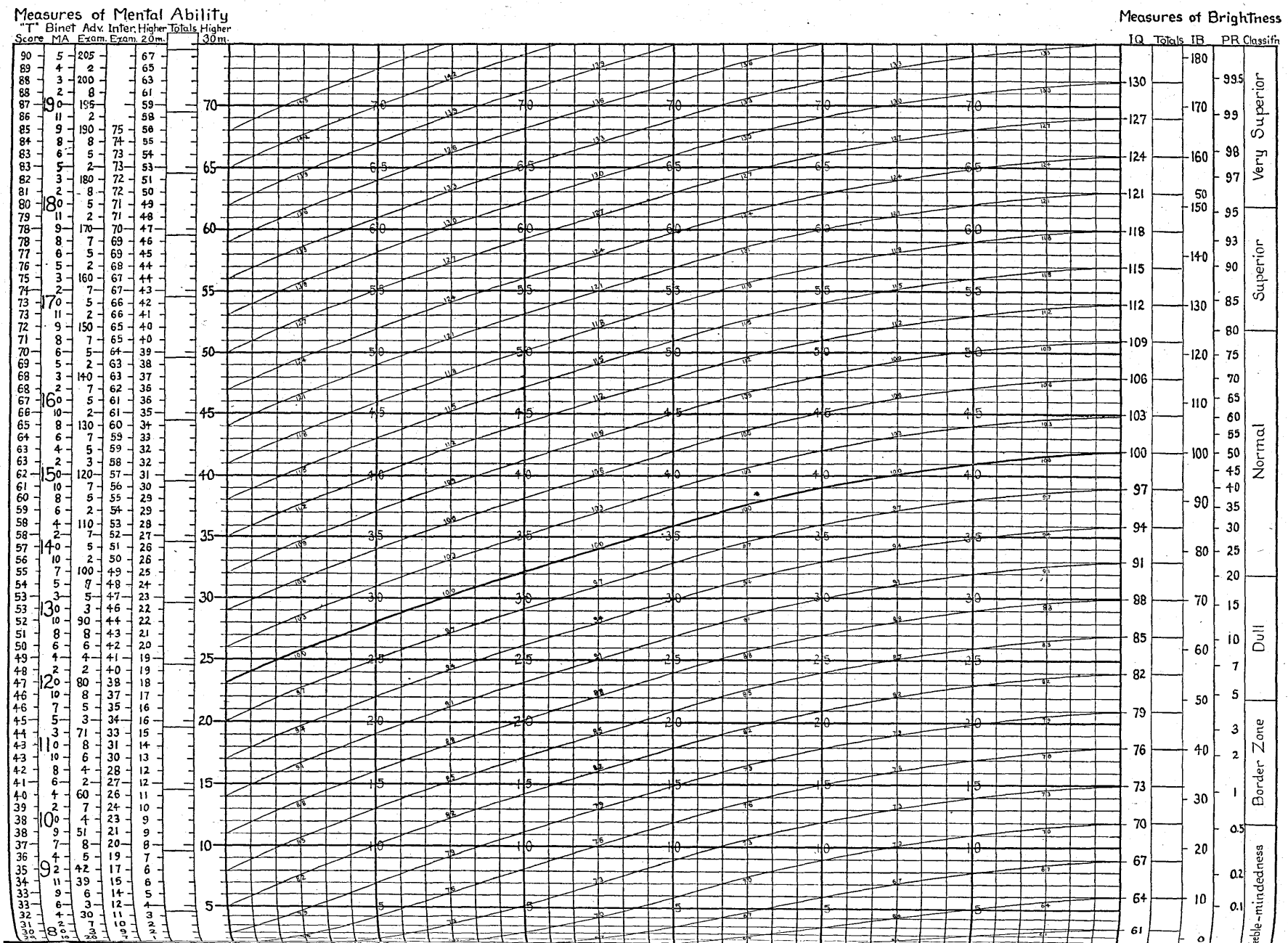


Chart number I is an interpretation Chart showing the distribution of IQ's in the 4th, 5th, 6th, 7th and 8th grades. This chart shows the overlapping of the different grades. The chart also shows the wide range of mental ability of the pupils in each of the five grades. The fourth grade is checked with a dot (•); the fifth grade with a triangle (△); the sixth with a cross (×); the seventh with a circle (○) and the eighth a circle and dot (⊙). An inspection of this table shows some of the fourth grade pupils with chronological age and intelligence equal to that of the sixth grade pupils. In reading the Chart the age of the pupils in years and months are listed at the bottom of the chart and the scores made on the Otis Intelligence Test along the left hand margin. This interpretation Chart is sometimes used as the only basis for classification. The writer feels that this Chart alone is not sufficient evidence of the pupils' ability to do the work of a given grade. Other measures of their ability should supplement this, such as scores on achievement tests and physical ability. This Chart shows some very superior pupils and some who are feeble minded. For example, one pupil has a chronological age of 15 years 3 months and an IQ of 60. This pupil is in the 5th grade. Another pupil in the same grade has a chronological age of 10 years 6 months and an IQ of 137. In the 7th grade one pupil has a chronological age of 15 years 10 months and an IQ of 64.

Another pupil in the same grade has a chronological age of 12 years 1 month with an IQ of 130. The oldest pupil in the 4th grade has a chronological age of 13 years and 10 months with an IQ of 101. The youngest pupil in the same grade has a chronological age of 9 years 4 months and an IQ of 123. The oldest pupil in the 8th grade has a chronological age of 16 years 7 months with an IQ of 83 and the youngest pupil in the same grade has a chronological age of 13 years 1 month and an IQ of 120. This wide range between pupils in the same grade, in both chronological age and mental ability makes it very evident that the present system of classification is not conducive to the best quality of work.

DISTRIBUTION OF SCORES

KANSAS PRIMARY ACHIEVEMENT TESTS 1930

TABLE VII

Scores	GRADES I	II	III
85-89			
80-84			6
75-79		1	5
70-74		0	8
65-69	1	1	4
60-64	4	2	4
55-59	4	9	4
50-54	7	4	1
45-49	4	4	5
40-44	2	2	3
35-39	0	4	3
30-34	4	4	0
25-29	0	2	1
20-24	4	3	
15-19	4	0	
10-14	6	2	
5-9	4		
0-4	2		
Total Papers	47	38	44
High score	67	78	84
Low score	2	13	28
Median	32	47	66
State Median	15	39	64

Table VII is the distribution of the scores made by the pupils in grades I to III inclusive on the Primary Achievement Tests issued by the Kansas State Teachers College of Emporia. This table gives the high score, low score, median score and the state median. The scores made by the pupils in the Lincoln schools were very good as the median in each grade was above the median made by the state. The first grade was very high. In fact it seems too high but the test was given and scored according to directions and those were the scores made. The pupils in the first grade made very high scores on the Otis Intelligence Tests which would help to substantiate the fact that this must be a group above the average in mental ability. Their school work throughout the year was also of superior quality. The first eight pupils in the first grade made IQ's above 125 which shows superior mental maturity. These same pupils made scores on the achievement tests above the state median of the second grade. There is no doubt but what they could do the work of the A section in the second grade. Four of the first grade pupils have IQ's of between 138 and 140 as shown in Table V. Their achievement test scores were above the state median for the third grade. These pupils could skip the second grade and take the work of the B section in the third grade. Two pupils in the second grade made achievement test scores above that of the state median for the third grade. Their IQ's were between 134 and 136. These pupils should be promoted to the

A section of the third grade. In the third grade there are five pupils with very high scores on the achievement tests and IQ's from 130 to 137. These pupils deserve special promotion to the A section of the fourth grade. In these three grades there are five pupils with IQ's below 90 and very low scores on the achievement tests. These pupils should be retained in the same grade another year. There are three pupils in the second and third grades who should be placed in an opportunity room. The size of the Lincoln schools and lack of funds make it impossible to have an opportunity room at the present time.

DISTRIBUTION OF SCORES IN READING
KANSAS ELEMENTARY TESTS 1930

TABLE VIII

SCORES	GRADES IV	V	VI	VII	VIII
45-47				2	4
42-44		2	2	4	3
39-41	1	1	0	3	5
36-38	1	2	2	3	3
33-35	0	1	3	7	0
30-32	1	4	3	8	4
27-29	5	4	8	5	4
24-26	6	7	6	1	6
21-23	4	13	7	4	1
18-20	4	5	6	0	2
15-17	6	2	2		
12-14	2	2			
9-11	2	0			
6-8	1	1			
3-5	1				
0-2					
Total Papers	34	44	39	37	32
High Score	40	44	43	45	46
Low Score	4	8	16	21	18
Median	23	23	25	33	33
State Median	19	23	27	30	34

DISTRIBUTION OF SCORES IN ARITHMETIC
KANSAS ELEMENTARY TESTS 1930

TABLE IX

SCORES	GRADES IV	V	VI	VII	VIII
65-69					
60-64					
55-59					1
50-54					1
45-59				1	5
40-44			1	4	6
35-39			2	6	5
30-34		4	8	9	7
25-29	1	4	16	11	6
20-24	5	19	10	6	0
15-19	12	12	2		1
10-14	14	5			
5-9	2				
0-4					
Total Papers	34	44	39	37	32
High Score	25	33	41	46	55
Low Score	5	12	18	20	18
Median	15+	21+	27	31	37
State Median	17	25	31	35	39

DISTRIBUTION OF SCORES IN SPELLING
KANSAS ELEMENTARY TESTS 1930

TABLE X

SCORES	GRADES IV	V	VI	VII	VIII
80-84				2	1
75-79		1	2	1	6
70-74		0	0	4	3
65-69		0	2	4	4
60-64		2	3	1	4
55-59		2	7	7	4
50-54	2	3	3	7	4
45-49	3	6	4	5	0
40-44	0	7	3	0	2
35-39	3	3	8	4	1
30-34	1	6	3	2	0
25-29	6	4	1		2
20-24	6	4	2		1
15-19	9	5	1		
10-14	4	1			
5-9					
0-4					
Total Papers	34	44	39	37	32
High Score	59	76	79	83	82
Low Score	12	14	17	30	20
Median	22	38	48	55	62.5
State Median	27	40	48	58	64

DISTRIBUTION OF SCORES IN LANGUAGE
KANSAS ELEMENTARY TESTS 1930

TABLE XI

SCORES	GRADES VII	VIII
75-79		
70-74	3	3
65-69	9	5
60-64	11	8
55-59	5	6
50-54	4	4
45-49	4	2
40-44	1	1
35-39		2
30-34		0
25-29		1
Total Papers	37	32
High Score	72	73
Low Score	44	29
Median	62	60
State Median	58	63

DISTRIBUTION OF SCORES IN HISTORY
KANSAS ELEMENTARY TESTS 1930

TABLE XII

SCORES	GRADES VII	VIII
48-51		
44-47		
40-43		
36-39	2	9
32-29	6	8
28-31	14	4
24-27	11	10
20-23	4	1
16-19		
12-15		
8-11		
Total Papers	37	32
High Score	36	38
Low Score	20	23
Median	29	32
State Median	26	31

DISTRIBUTION OF SCORES IN GEOGRAPHY
KANSAS ELEMENTARY TESTS 1930

TABLE XIII

	GRADES
SCORES	VII
75-59	
70-74	2
65-59	5
60-64	4
55-59	9
50-54	10
45-49	6
40-44	0
35-39	1
30-35	
Total Papers	37
High Score	73
Low Score	36
Median	55
State Median	44

Table VIII, IX, X, XI, XII and XIII show the distribution of achievement test scores for grades 4, 5, 6, 7 and 8 in Reading, Arithmetic, Spelling, Language, History and Geography. Table VIII, Reading, grades 4 and 7, the medians were above the state median and the 5th grade median was the same as the state median. Two grades, 6 and 8, were slightly below the state median. The 6th grade was 2 points below and the 8th grade was 1 point above. The 8th grade was below the state median in all but one subject, History. They were from 1 to 3 points below in all other subjects, as Tables IX, X, XI and XII will show. This would indicate one of two things, poor teaching methods or a group averaging low in mentality. By referring to Table IV we see that almost 33% of the 8th grade pupils are listed as dull pupils with only one pupil in the superior group. Many of these pupils should be placed in an opportunity room or retained in this grade for another year. This will account for the medians on the achievement test being lower than the state median.

The 7th grade achievement scores shown in Tables VIII, IX, X, XI and XII were above the state median in three subjects and below in three subjects. They were above in Geography 11 points, History 3 points and Language 4 points. They were below the state median in Reading 3 points, Arithmetic 4 points and Spelling 3 points. By adding up the points above and below the state medians, it will be seen that they had 18 points above the medians and 10 points below. It would seem that they

are a little better than an average grade and considerably better than the 8th grade. The 7th grade median was higher than the 8th grade in Language and the same in reading. There are four of the 7th grade pupils superior in intelligence (Table IV) and their achievement test scores were above the median score of the 8th grade. Arithmetic seemed to be their weakest subject as they were 4 points below the state median in this subject. Geography was their best subject; they were 11 points above the state median. There are 3 pupils in the 7th grade listed as dull and one pupil inferior (Table IV). These pupils made very low scores on the achievement tests and will be retained in the grade. The inferior pupil is feeble minded.

Tables VIII, IX and X show the 6th grade below the state median in Reading 2 points, Arithmetic 4 points and the same median in Spelling. There are 4 pupils in the 6th grade who are superior (Table IV). These 4 pupils have achievement test scores above the state median for the 7th grade. These pupils should be promoted. There are 8 pupils in the 6th grade according to Table IV who are dull. These pupils had achievement test scores below the median of the 5th grade in each of the subjects. These pupils should be demoted, however no pupils are being demoted, due to the discouragement attending demotions. They will be retained in the same grade.

The 5th grade (Tables VIII, IX and X) are below the state median in Arithmetic 4 points, Spelling 2 points and the same as the state median in Reading. This indicates that the grade

is a little below the average as a grade. There are 6 pupils superior, 13 dull and 1 inferior in mental ability (Table IV). Four of the superior pupils in mental ability had achievement scores above the state median of the 6th grade in all subjects. The other 2 superior pupils had achievement scores above the state median of the 6th grade in all but one subject and they were very close. These pupils will all be promoted. There are 13 dull pupils and 1 inferior (Table IV) in the fifth grade. The remaining 4 should be given regular promotion.

Tables VIII, IX and X show the 4th grade medians 4 points above the state median in Reading, 2 points below in Arithmetic and 5 points below the state median in Spelling. This indicates that the 4th grade is a little below the average grade, judging from the results of these tests. There are 3 superior pupils and 5 dull pupils (Table IV). The 3 superior pupils made achievement test scores above the state median for the 5th grade and should be promoted to the A section of the 5th grade. The 5 dull pupils did inferior work on the achievement tests with scores in the lowest 25% and should be retained in the grade.

CHAPTER V

SUMMARY AND CONCLUSIONS

The results of this study have helped to point out the defects in a system of classification and promotion based upon chronological age and teachers' marks. Such a system of classification in most cases properly places the inferior pupils, but it fails to recognize the superior pupil. The teachers are slow to recognize superior mental maturity, thus causing the superior pupil to be mentally retarded.

The results obtained from the Otis Intelligence Tests agree in almost all cases with the results obtained from the Achievement Tests. The results of these tests did not agree with the Witham's Age-Grade Classification, which classified the pupils upon the basis of chronological age. This fact would indicate that the best measures of a pupil's ability to do work are measures of mental maturity and his achievement test scores in school subjects. In the Lawrence Experiment the pupils were classified upon the basis of scores made upon the Otis Group Intelligence Tests. The results of this experiment show that the pupils did much better work as a result of the reclassification.

Another study made by Arthur I. Gates[7] shows a very close correlation between achievement in school subjects and intelligence tests.

H. O. LeGrande[10] made a comparative study of certain dual scholarship contest scores and their relation to intelligence scores. In his study he found a very close relationship existing between results on scholarship tests and intelligence tests.

Van Wagemen[27] in a study on "Grade Placement vs Mental Age As a Factor in School Achievement" found the mental age an important factor in the success or failure of the child in school work. The results of this study substantiate the results of the past experiments;--there is a very close relationship existing between the achievement test scores and intelligence scores. Pupils making high scores in the achievement tests had high IQ's on the Otis Intelligence Tests and pupils making real low scores on the achievement tests had low IQ's.

The results of this study point out the close relationship of pupil's scores on intelligence tests and achievement tests. The scores made upon these tests are a fairly accurate measure of the child's ability to achieve. Some pupils were permitted to skip a grade, others were promoted to the A section or best section of the next grade. Promotions were made upon the basis of mental maturity as shown by their IQ's, scores on achievement tests, chronological age and physical fitness. The physical ability of the child to do the work of a given grade was determined by the teacher and by physical examination. The results of the physical examination were not con-

sidered in making this study.

Tables given in this study show the wide range in both mental maturity and chronological age in the same grades. We find a range in mental maturity from the very superior to the feeble minded and in chronological age as much as four years difference.

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APPENDIX

ACHIEVEMENT TESTS

- Primary Achievement Test
- Reading
- Spelling
- Geography
- American History
- Language
- Arithmetic

OTIS GROUP INTELLIGENCE SCALE

- Primary Examination (Form A)
- Manual of Directions and Key
- Intermediate Examination (Form A)
- Manual of Directions and Key
- Interpretation Chart for Intermediate Examination

OTIS GROUP INTELLIGENCE SCALE

Devised by ARTHUR S. OTIS

PRIMARY EXAMINATION: FORM A

My name is.....

My birthday is.....

On my last birthday I was ..... years old.

I am in the ..... grade.

The name of my school is.....

The name of this city is.....

The date today is.....

(Do not write below this line.)

Remarks or Further Data

1.....

2.....

3.....

4.....

5.....

6.....

7.....

8.....

9.....

10.....

11.....

12.....

13.....

14.....

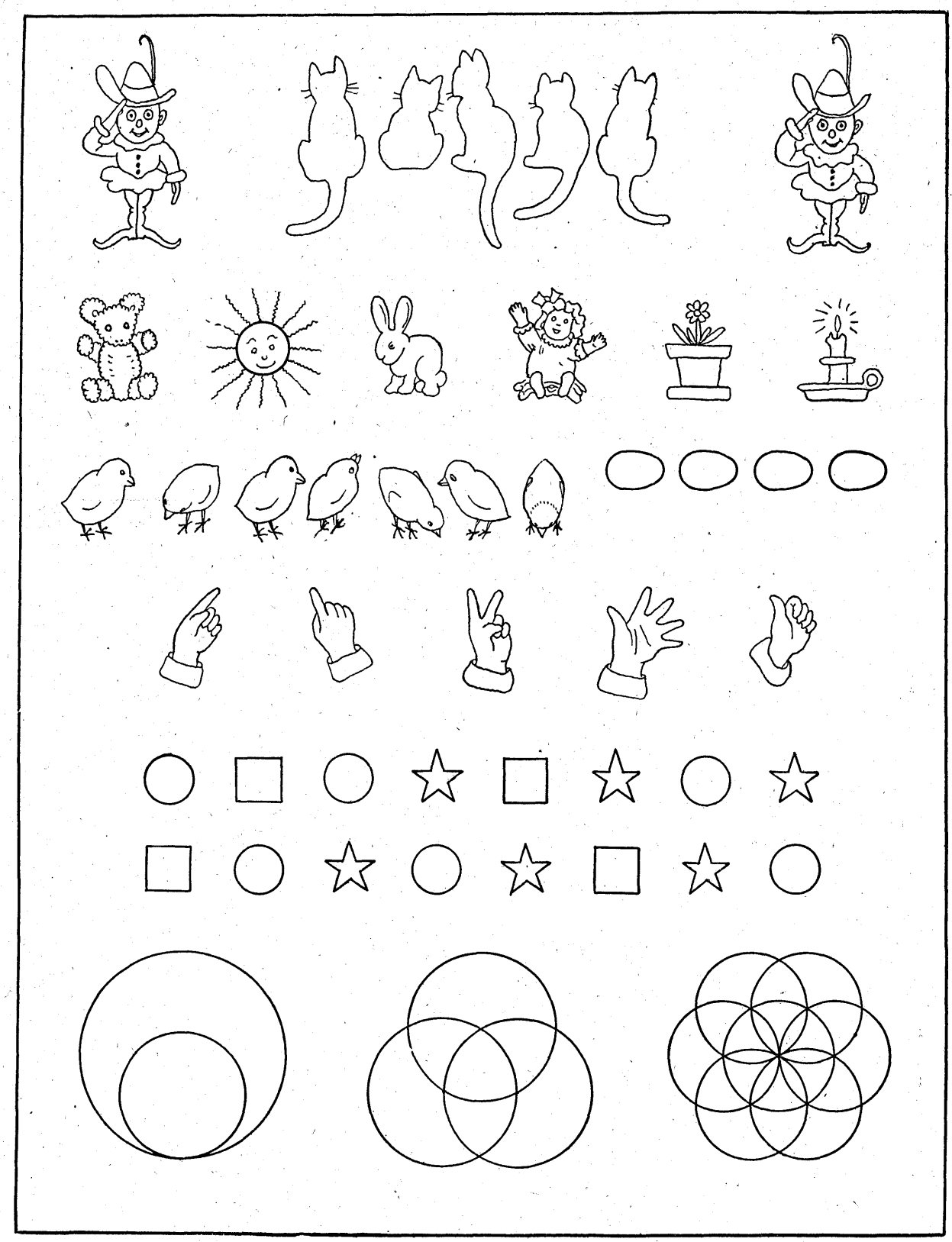
15.....

TEST	SCORE
1	
2	
3	
4	
5	
6	
7	
8	
Total Score	
Norm	
IB	
PR	

Published by World Book Company, Yonkers-on-Hudson, New York, and 2126 Prairie Avenue, Chicago
 OGIS: PR: A–15

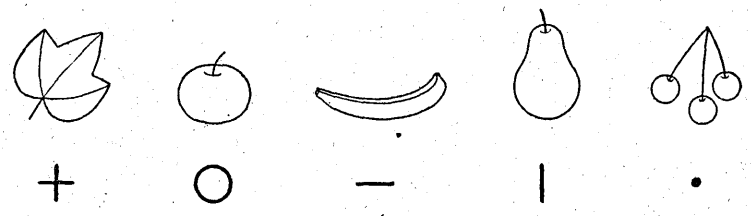
To the Examiner: Do not administer this test without first reading carefully the Manual of Directions. The Manual must be ordered extra.

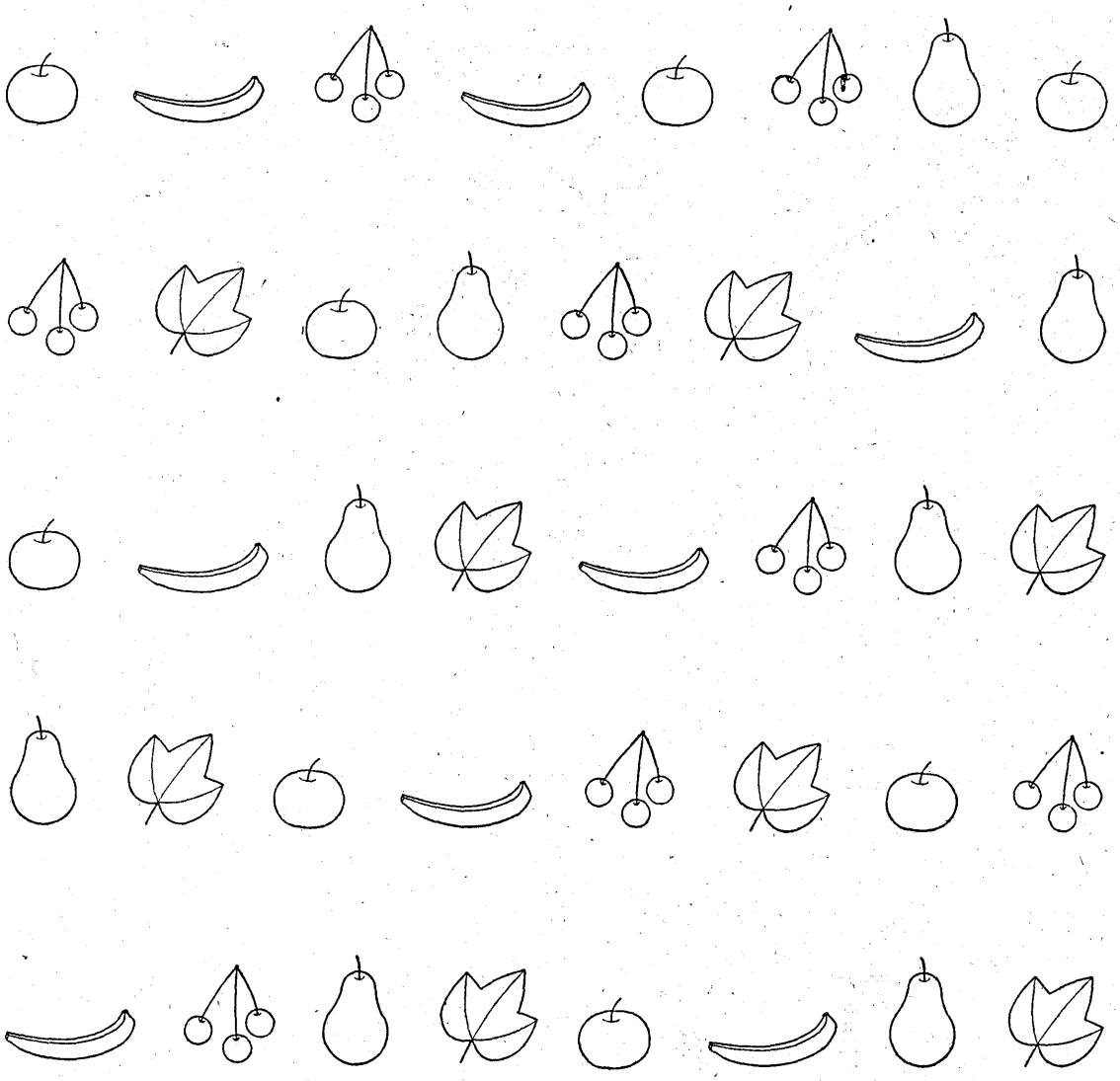
1



Score . . . . . .

2





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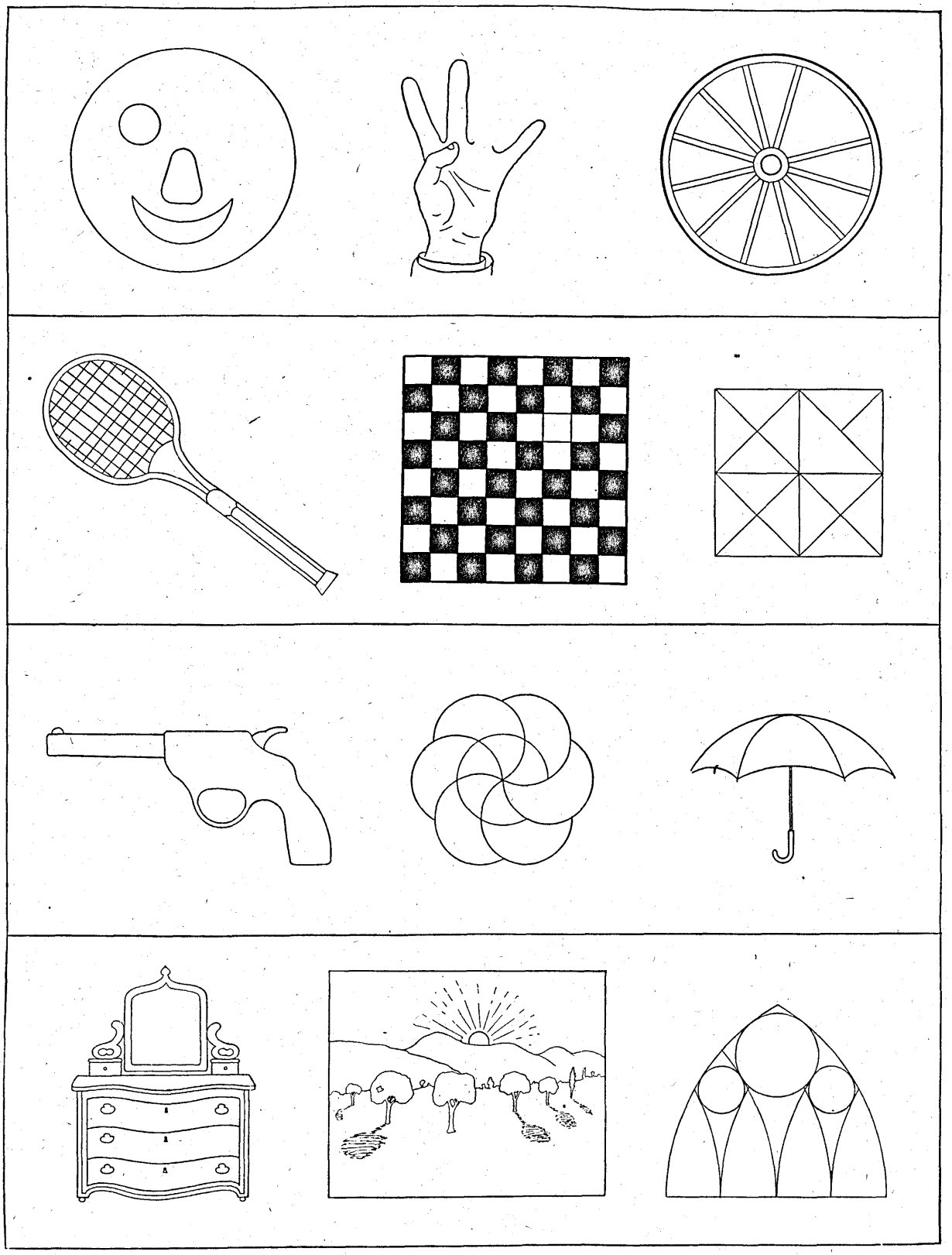
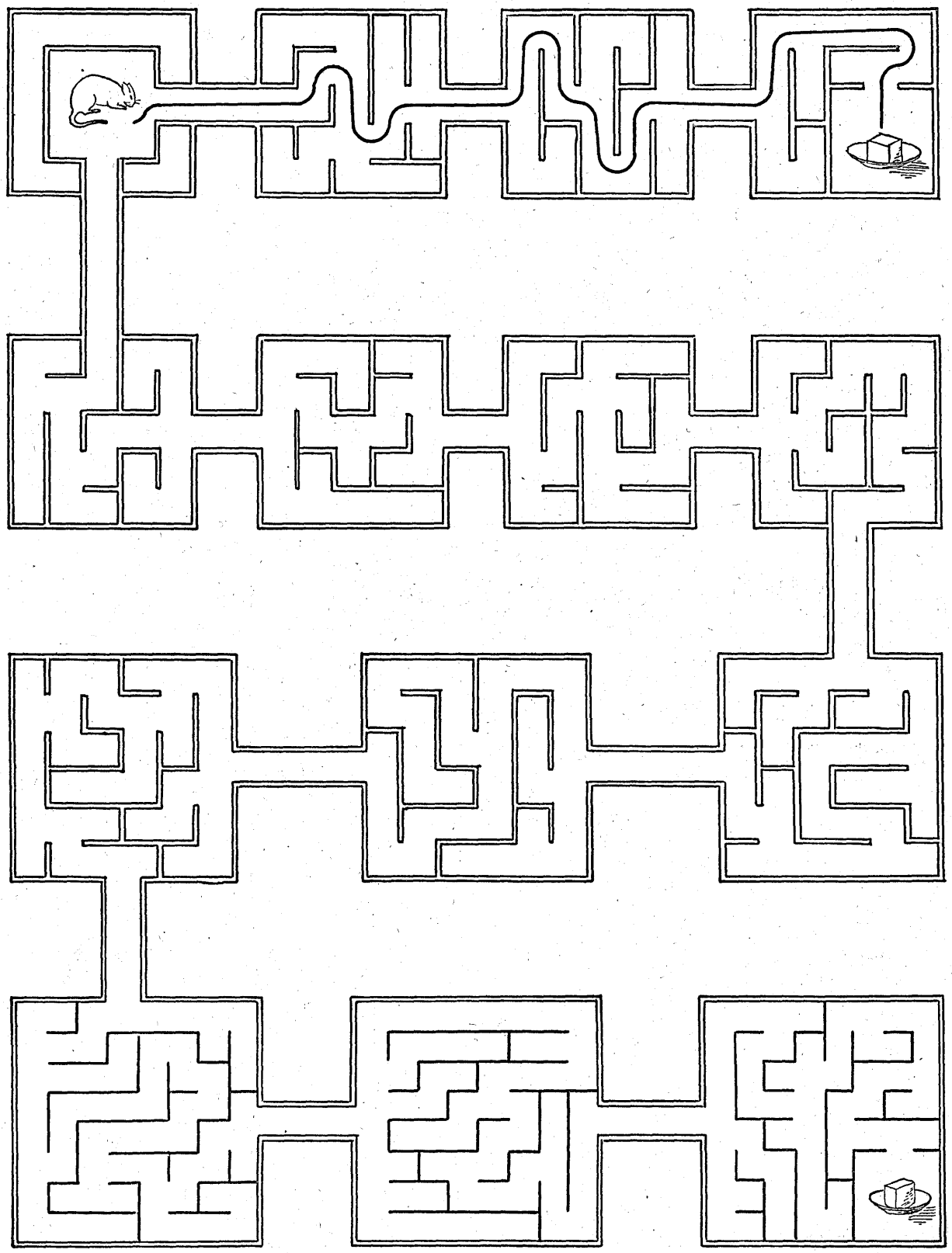
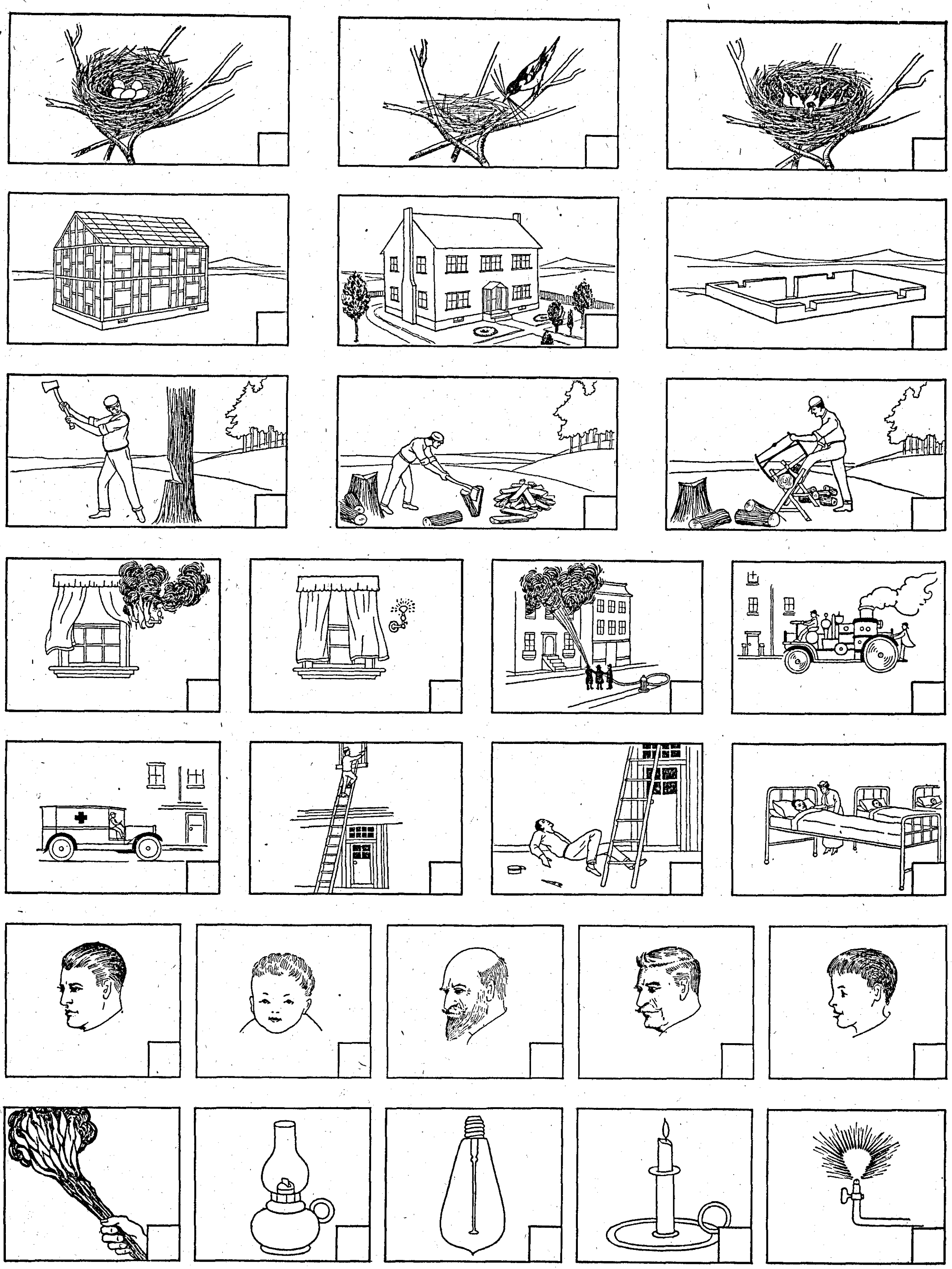


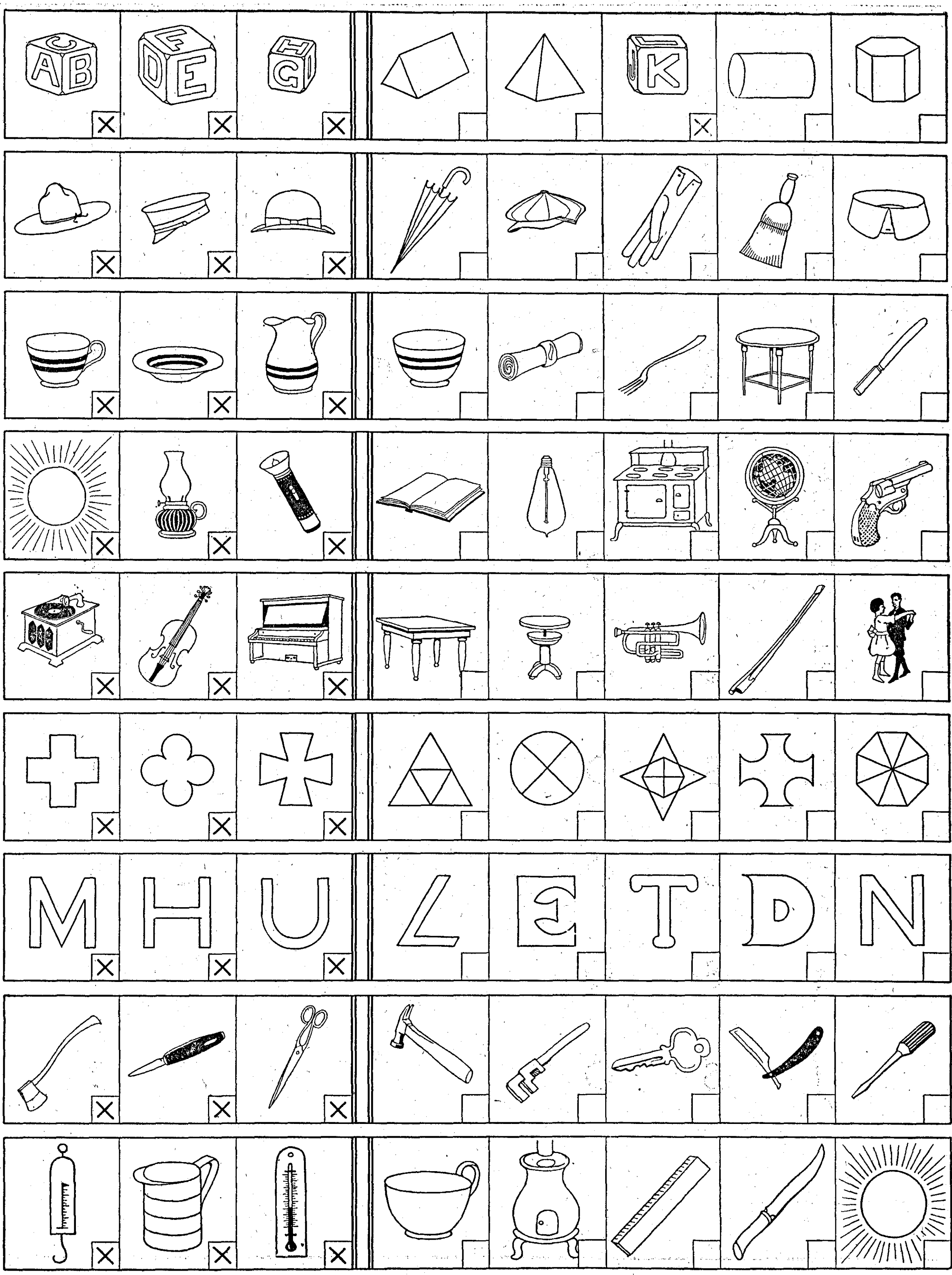
Score. . . . . .



Score . . . . . .



Score. . . . .



Score...............

A	S	O		K	1	2	3
B	S	O		L	1	2	3
C	S	O		M	1	2	3
D	S	O		N	1	2	3
E	S	O		O	1	2	3
F	S	O		P	1	2	3
G	S	O		Q	1	2	3
H	S	O		R	1	2	3
I	S	O		S	1	2	3
J	S	O		T	1	2	3

Score.....

Score.....

OTIS GROUP INTELLIGENCE SCALE

Devised by ARTHUR S. OTIS, PH.D.
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MANUAL OF DIRECTIONS FOR PRIMARY EXAMINATION

CONTENTS

I. GENERAL PROCEDURE

The Otis Group Intelligence Scale is designed to test general mental ability. The scale is issued in two series, a Primary Examination and an Advanced Examination. The Primary Examination is designed especially for the Kindergarten and for Grades 1 to 4. The Advanced Examination is designed for Grades 5 to 12 — in fact, for all literate persons, including university students. To provide for reëxamination after a short interval without the scores being influenced by memory of the previous examination, and also to prevent collusion between groups successively examined, two forms of the test are available, Form A and Form B. These are different in substance but similar in structure, and the total scores from them are equivalent.

When it is inconvenient to give the entire test at one sitting, divide and administer in two sittings. The examination booklets should be distributed and the headings filled in as usual, and when the first half of the tests have been administered, the booklets should be collected immediately so that the pupils may not acquaint themselves with the remaining tests. The booklets should be collected in such a manner that, when the pupils are seated in the same seats for the second sitting, the booklets can be returned to them without confusion. At a later period the examination booklets may be distributed again and the examination completed without in any way vitiating results. For young pupils this method is of advantage in that it prevents fatigue.

REËXAMINING

The method of examining pupils in groups is subject, of necessity, to certain limitations. It is impossible for the examiner to be sure in every case that he has the full and undistracted attention at all times of all the pupils being tested. While it is impossible for a really dull person to make a good score in the examination, it occasionally happens that a pupil tested with others in a group does not do himself justice. The most common reasons are nervousness, temporary confusion, or lapse of attention. For this reason, no score should be taken as absolute. Whenever the score of any pupil does not accord reasonably with the quality of his school work or other known facts about his mentality, he should be given further examination. Form B of the test, in both series, is available for this purpose. Sometimes a second testing in a group will reveal the fact that he was capable of making a better score. If a second examination is given within a short time after the first, a slight allowance should be made for so-called practice effect. If a pupil makes a second score which is more than ten points above the first, however, it is probable that his first score was vitiated in some way and was therefore too low.

Causes which vitiate a pupil's score commonly have the effect of increasing the variability of the pupil's test scores. For example, if a pupil has one or two zero test scores or very low ones along with others considerably above zero, it is probable that these low scores are caused by factors other than mere lack of intelligence. In order to discover whether this is not the case, the pupil may be examined individually and given only those tests in which he failed badly. In any other puzzling case, especially when it may be necessary to pronounce a pupil feeble-minded, an individual examination should be given.

CONSIDERATIONS REGARDING GIVING OF DIRECTIONS

In giving the directions for these tests, it is essential that every point be clearly understood by every one. This can be assured in no other way than by giving the directions slowly and distinctly, with proper expression and emphasis. Before an examiner gives a test for the first time, he should practice the directions several times, preferably with one or more listeners who are unfamiliar with the test. In order that the meaning of each sentence may be fully grasped, it should be followed by a pause. It is impossible to emphasize too strongly the need for these precautions. A good rule to follow is to allow a *pause of* 2 *seconds* after *every sentence.* The procedure may be considered as standardized only on the condition that the examiner makes an adequate pause after every sentence throughout the testing.

II. DIRECTIONS FOR ADMINISTERING

To administer the examination. begin by addressing the pupils as follows: **" We are going to give you some booklets now, and we will tell you pretty soon what you are to do with**

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them. While they are being passed you may look at the first page, but do not open them until you are told to."

Have monitors pass the booklets, one to each pupil, right side up. If the pupils can write, have them fill in the blanks, telling their names, birthdays, ages, etc. Give any help that will facilitate. It might be well to fill in the blanks beforehand on booklets for those pupils who cannot write.

When blanks are filled in, say,[1] "Now lay your pencils down and listen a moment, while I read to you about what you are to do. In these booklets are some pictures and drawings and other interesting things. We want to see if you can answer some questions about the pictures and drawings. Also you will be told to make certain marks in certain places in the booklets and we want to see if you can do exactly what you are told to do, and how quickly you can do it.

"Now in order to play this little game fairly, nobody must look to see what any one else is doing. That isn't fair. We want to find out what you can do all by yourself. You must listen very carefully to everything I say, so that you will be sure to hear the first time, because I will not repeat anything. Do not ask any questions. We will take one page at a time. I will tell you when to turn the page, and you must not turn any page until you are told to."

Test 1. Following Directions [*Form A*]

(For Form B, see below)

"Now turn over to the next page — the one with pictures of little men in the corners.[2] Here you see pictures of many things. I am going to tell you something to do with your pencils, on this page, and I want to see if you can do exactly what I say. Listen carefully while I tell you what to do, and then do it as quickly as you can. Notice the pictures at the top of the page. (1) Now take your pencils and put a tail on the kitty that has no tail." (Pause 5 seconds.)

"Remember not to look around. That isn't fair.

(2) "Now look at the little man in the upper right-hand corner and draw a line for him to stand on." (Pause 5 seconds.)

(3) "Now look at the next row of pictures and draw a circle around the doll." (Pause 5 seconds.)

(4) "Next find the picture of something that can run, and draw a line under it." (Pause 5 seconds.)

(5) "Next find the picture that is between the doll and the candle and make a little cross under it." (Pause 5 seconds.)

(6) "Next find the picture of something that gives light and can be picked up. Make a round dot under it." (Pause 5 seconds.)

(7) "Next draw a line from the teddy bear's ear to the rabbit's ear that will go under the sun." (Pause 5 seconds.)

(8) "Next find the picture of a child's plaything that has large ears, and put a little circle under it." (Pause 10 seconds.)

(9) "Now notice the chicks and eggs and draw more eggs so that there will be as many eggs as there are chicks." (Pause 10 seconds.)

(10) "Next find the two chicks that look most alike and cross out the one between them." (Pause 5 seconds.)

(11) "Now notice the pictures of hands and draw a ring around the picture of a right hand." (Pause 5 seconds.)

(12) "Next, in the two rows of little drawings below the hands, cross out each circle that has a star under it." (Pause 10 seconds.)

(13) "Next make a dot in each square that is between two stars." (Pause 10 seconds.)

(14) "Now notice the large circle with a smaller circle in it. Put a cross in the space that is in the large circle but not in the smaller circle." (Pause 5 seconds.)

(15) "Next, in the middle drawing, put a cross in the space that is in all three circles." (Pause 5 seconds.)

(16) "Next, in the third drawing, in the corner, count *all* the circles, and write the number below the drawing." (Pause 10 seconds.)

Test 2. Association [*Form A*]

"Now look at the next page. Notice the first row of pictures at the top of the page. There is a leaf with a little cross under it, an apple with a little circle under it, a banana with a line under it, a pear with an up-and-down line under it, and some cherries with a dot under them. You are to put the same marks under the same pictures below the line. Look at the next row of pictures. There you see an apple, banana, cherries, etc. Put a little circle under the apple, like the circle under the apple in the top row." (Pause 5 seconds.)

"Now put a line under the banana just like the line under the banana in the top row." (Pause 5 seconds.)

"Now put a little round dot under the cherries just like the dot under the cherries in the top row." (Pause 5 seconds.)

"Now put under the next banana the same kind of line that is under the other bananas." (Pause 5 seconds.)

"Now what goes under the apple? If you know, raise your hand." Call for an answer, and when the right answer is given say, "Yes, a little circle, the same as before. Put the little circle under the apple." (Pause 5 seconds.)

"Now put under the cherries the mark that belongs under them and do the same with the pear and apple." (Pause 10 seconds.)

"Then go right on with the other four rows and put under each picture the mark that belongs under it. Work fast and see how many you can get done before I say stop." After

[1] All passages to be read to the pupils are given in bold type. For the sake of uniformity, these should be strictly adhered to.

[2] The examiner will realize that the administration of the test is standardized only when the directions are read at a standard rate. This is such that the reading of the first paragraph — without allowing time for turning the page — is slightly more than half a minute. The examiner should time his reading of this paragraph and gauge the rate of reading accordingly. If less than one-half minute is taken, the reading rate is too rapid and may vitiate the scores in the test.

1 minute say, "Stop. Lay down your pencils." (Pause.[1]) "Turn to the next page."

Test 1. Following Directions [*Form B*]

"Now turn over to the next page — the one with pictures of little men in the corners.[2] Here you see pictures of many things. I am going to tell you something to do with your pencils on this page, and I want to see if you can do exactly what I say. Listen carefully while I tell you what to do, and then do it as quickly as you can. Notice the pictures at the top of the page. (1) Take your pencils and put a tail on the kitty that has no tail." (Pause 5 seconds.)

"Remember not to look around. That isn't fair.

(2) "Now look at the little man in the upper left-hand corner, and draw a line for him to stand on." (Pause 5 seconds.)

(3) "Now look at the next row of pictures, and draw a circle around the rabbit." (Pause 5 seconds.)

(4) "Next find the picture of something that has hands, and draw a line under it." (Pause 5 seconds.)

(5) "Next find the picture that is between the sun and the rabbit, and make a little cross under it." (Pause 5 seconds.)

(6) "Next find the picture of something that grows but cannot see, and make a round dot under it." (Pause 10 seconds.)

(7) "Next draw a line from the doll's hand to the flower in the flower pot that will go under the candle." (Pause 5 seconds.)

(8) "Next find the picture of something that gives light but cannot be touched, and put a little circle under it." (Pause 10 seconds.)

(9) "Now notice the chicks and eggs, and draw more eggs so that there will be as many eggs as there are chicks." (Pause 10 seconds.)

(10) "Next find the two chicks that look most alike, and cross out the one between them." (Pause 5 seconds.)

(11) "Now notice the pictures of hands, and draw a ring around the picture of a right hand." (Pause 5 seconds.)

(12) "Next, in the two rows of drawings below the hands, make a dot in each circle that is between two stars." (Pause 10 seconds.)

(13) "Next cross out each star that has a circle under it." (Pause 10 seconds.)

(14) "Now notice the large circle with a smaller circle in it. Put a cross in the space that is in the large circle but not in the smaller circle." (Pause 5 seconds.)

(15) "Next, in the middle drawing, put a cross in the space that is in the two lower circles but not in the upper circle." (Pause 10 seconds.)

(16) "Next, in the third drawing, in the corner, count *all* the circles, and write the number below the drawing." (Pause 10 seconds.)

Test 2. Association [*Form B*]

"Now look at the next page. Notice the first row of pictures at the top of the page. There is a pair of scissors with a little cross under it, a ball with a little circle under it, a spoon with a line under it, a bottle with an up-and-down line under it, and a spool with a dot under it. You are to put the same marks under the same pictures below the line. Look at the first row of pictures below the line. There you see a ball, spool, spoon, etc. Take your pencils and put a little circle under the ball, like the circle under the ball in the top row." (Pause 5 seconds.)

"Now put a line under the spoon just like the line under the spoon in the top row." (Pause 5 seconds.)

"Now put a little round dot under the spool just like the dot under the spool in the top row." (Pause 5 seconds.)

"Now put under the next spoon the same kind of line that is under the other spoons." (Pause 5 seconds.)

"Now what goes under the ball? If you know, raise your hand." Call for an answer, and when the right answer is given say, "Yes, a little circle, the same as before. Put the little circle under the ball." (Pause 5 seconds.)

"Now put under the spool the mark that belongs under it, and do the same with the bottle and ball." (Pause 10 seconds.)

"Then go right on with the other four rows and put under each picture the mark that belongs under it. Work fast and see how many you can get done before I say stop." After 1 minute say, "Stop! Lay down your pencils." (Pause.[1]) "Turn to the next page."

Test 3. Picture Completion [*Forms A and B*]

"On this page are twelve pictures. Something is left out of each picture. Look at the first picture and think what is left out. If you know, raise your hand." Call on a pupil for the answer. Then say, "Yes, one eye is left out. Draw in the eye where it should go." (Pause 5 seconds.) "Now there is just one thing left out of each picture. Look at each of the other pictures and, as quickly as you can, draw in what is left out. See how many you can get done before I say 'Stop.' Ready, go." After 2 minutes say, "Stop! Lay your pencils down and look at the next page."

Test 4. Maze [*Forms A and B*]

"Here you see pictures of little square boxes with walls in them and little paths between the walls. In the box in one upper corner you see a little mouse, and in the other upper corner is a piece of cheese. And there is a line from the mouse to the cheese, showing just how the mouse would have to go, around through the paths, to get to the cheese.

[1] At this point there is no harm in relieving the disappointment of those who did not finish by asking, "How many finished the second row? Third row? Fourth row?" etc. Note when about half the hands have been lowered, and then say, "If you finished that many rows, you did very well."

A similar moment of relief and opportunity for questioning is permissible after each test, provided the examiner will see that no pupil takes the opportunity to look at the paper of another.

[2] See footnote to Test 1, Form A.

[1] See footnote to Test 2, Form A.

The line shows the *only* way to get to the cheese. If the mouse went into any other path, he would run up to a wall and have to turn and go back to the right path.

"Now you will see another piece of cheese in the box in the *lower* corner of the page. How would the mouse get to that piece of cheese? When I say 'Ready,' you are to draw a line to show just where the mouse would have to go to get to this other piece of cheese, in the lower corner. Be very careful not to go into any wrong path. See how far you can get before I say 'Stop,' without crossing over any wall or going into any wrong path. Ready, begin." After 2 minutes say, "Stop! Lay your pencils down." (Pause if desired.) "Turn to the next page."

Test 5. Picture Sequence [*Forms A and B*]

"Look at the three pictures at the top of the page. They tell a little story about a bird building a nest and hatching out some little birds. You can see that the pictures are not in the right order. Think which one should come first." Call on a pupil, and when the right answer is given, say, "Yes, the bird has to build her nest first, so put a figure 1 in the picture where the bird is building her nest. Put it in the small square in the lower corner of the picture." (Pause 5 seconds.) "Now which picture comes next?" Call on a pupil, and when the right answer is given, say, "Yes, so put a figure 2 in the picture of the nest with the eggs in it, and put a figure 3 in the picture of the nest with the little birds in it. Always put the number in the small square in the corner of the picture." (Pause 5 seconds.) "Now you are to do the same with all the other rows of pictures. In each row, find the picture that should come first and put a figure 1 in the corner of that picture. Then put a figure 2 in the picture that should come next, and so on. See how many rows you can get done before I say 'Stop.' Go ahead." After 2 minutes say, "Stop! Lay your pencils down and look at the next page."

Test 6. Similarities [*Forms A and B*]

"Look at the first row of pictures. You will see that they are all little wooden blocks. The three blocks together on this side with little crosses under them (hold up booklet and point so all may see) are alike, because they are all square blocks with letters on them. How many see another block in that row that is like the first three? Raise your hands." Call on a pupil, saying, "Which one is it?" When the right answer is given, say, "Yes, it is the one with the letter K on the front, isn't it? and there is a little cross in the corner to show that that is the right answer.

"Now look at the second row of pictures. The first three, that have little crosses under them, are alike. Look at the other five and pick out the right answer — the one that is *most like* the first three. Put a cross in the little square in the corner under the answer." (Pause 5 seconds.)

"Now in each row below, in the same way, look at the first three pictures and see how they are alike, then put a cross under the answer — the one that is *most like* the first three. Remember, there is only *one* right answer in each row. Go ahead and work fast." After 2 minutes say, "Stop! Turn over to the last page." (Pause for short rest, if desired.)

Test 7. Synonym-Antonym [*Forms A and B*]

"Notice on the side of the page the letters, A, B, C, D, E, and so forth, and after the letter A the letters S and O, and after B the letters S and O, and so on. The letter A stands for two words I shall read. You are to think whether they mean the same, like *quick* and *fast*, or whether they mean the opposite, like *yes* and *no* or like *good* and *bad*. If they mean the same, you are to draw a line around the letter S, after the A. But if they mean the opposite, you are to draw a line around the letter O. The two words are *up* and *down*. Should you draw the line around the S or the O?" Call on a pupil, and when right answer is given, say, "Yes, *up* and *down* mean the opposite; so draw a line around the O." (Pause 5 seconds.) "Now we will go on in the same way." (For Form B, see below.)

[*Form A*]

"Question B. Put your finger on B — the two words are *large* and *big*. Draw the line around the right letter to show whether they mean the same or the opposite." (Pause 5 seconds.)

"Question C. Put your finger on C — the two words are *pleasant* and *agreeable*." (Pause 5 seconds.)

"Question D. *North* and *south*." (Pause 5 seconds.)

"Question E. *Strange* and *common*." (Pause 5 seconds.)

"Question F. *Empty* and *vacant*." (Pause 5 seconds.)

"Question G. *Awkward* and *clumsy*." (Pause 5 seconds.)

"Question H. *Sensible* and *foolish*." (Pause 5 seconds.)

"Question I. *Same* and *different*." (Pause 5 seconds.)

"Question J. *Courage* and *bravery*." (Pause 5 seconds.)

[*Form B*]

"Question B. Put your finger on B — the two words are *tall* and *high*. Draw the line around the right letter to show whether they mean the same or the opposite." (Pause 5 seconds.)

"Question C. Put your finger on C — the two words are *ordinary* and *common*." (Pause 5 seconds.)

"Question D. *Pleasant* and *disagreeable*." (Pause 5 seconds.)

"Question E. *Forget* and *remember*." (Pause 5 seconds.)

"Question F. *Deceive* and *lie*." (Pause 5 seconds.)

"Question G. *Liberty* and *freedom*." (Pause 5 seconds.)

"Question H. *Same* and *opposite*." (Pause 5 seconds.)

"Question I. *Capture* and *escape*." (Pause 5 seconds.)

"Question J. *Justice* and *fairness*." (Pause 5 seconds.)

Test 8. Common Sense [*Forms A and B*]

"Now notice on the other side of the page the letters K, L, M, N, O, and so on, and after each letter the numbers 1, 2,

and 3. Each letter stands for a question I shall read to you. I am going to read three answers to each question. If answer No. 1 is the right one, you are to draw a line around the number 1. If answer No. 2 is the right one, draw a line around the number 2. But if answer No. 3 is the right one, draw a line around the number 3. The first question is: Why do birds build nests? These are the answers. Think which is the right one. Answer No. 1: Because they like to work. Answer No. 2: To make a place to lay their eggs. Answer No. 3: To keep other birds away. Now which is the right answer, No. 1, 2, or 3?" Call on a pupil, and when the right answer is given, say, "Yes, answer No. 2 is the right one, because birds build their nests to lay their eggs in. So draw a line around the number 2 after the letter K." (Pause 5 seconds.) (For Form B see below.)

[*Form A*]

"Now I will read question L. Keep your finger on the letter L while I read. Think which answer is the right one and draw a line around the right letter. Question L: If you hurt some one without meaning to, what should you do?

One: Say you didn't do it.
Two: Beg his pardon.
Three: Run away." (Pause 5 seconds.)

"Question M: Why is it a good thing to brush our teeth?

One: So we can have a toothbrush.
Two: Because tooth paste has a pleasant taste.
Three: To keep our teeth clean and white." (Pause 5 seconds.)

"Question N: Why do people take baths?

One: They enjoy it.
Two: To make use of the bathtub.
Three: It is healthful." (Pause 5 seconds.)

"Question O: Why would most people rather have an automobile than a horse and carriage?

One: Automobiles have rubber tires.
Two: They go faster.
Three: They use gasoline." (Pause 5 seconds.)

"Question P: Why do men raise their hats when they meet women they know?

One: They learned to do it when they were boys.
Two: It is considered polite.
Three: To show their hair is brushed." (Pause 5 seconds.)

"Question Q: Why do automobiles keep to the right side of the street?

One: It is the custom and is easier for them to pass one another.
Two: The road is smoother on that side.
Three: They are not so likely to run over people." (Pause 5 seconds.)

"Question R: Why are streets lighted at night?

One: So people can see where they are going.
Two: Because children are afraid of the dark.
Three: Because dark streets are colder." (Pause 5 seconds.)

"Question S: In what way are fish like pigeons?

One: They have feet to walk with.
Two: They have two eyes.
Three: They can swim and fly." (Pause 5 seconds.)

"Question T: Why should we not pick up a kitten by its tail?

One: It doesn't look well.
Two: It hurts the kitty.
Three: Its tail might come off." (Pause 5 seconds.)

"Now lay your pencils down and turn your booklets over to the front page." Have monitors collect the booklets.

[*Form B*]

"Now I will read question L. Keep your finger on the letter L while I read. Think which answer is the right one and draw a line around the right letter. Question L: Where is the sun at night?

One: It is behind heavy clouds.
Two: It is on the other side of the earth.
Three: It has set in the ocean." (Pause 5 seconds.)

"Question M: If you buy two cents' worth of candy and give the store man a nickel, how many pennies should he give you back?

Answer No. 1: One penny.
Answer No. 2: Two pennies.
Answer No. 3: Three pennies." (Pause 5 seconds.)

"Question N: If you gave a newsboy twenty-five cents for a three-cent newspaper, what would be the right change?

One: Three nickels.
Two: Two dimes.
Three: Two dimes and two pennies." (Pause 5 seconds.)

"Question O: Which would most people rather hear?

One: A factory whistle.
Two: A piano playing.
Three: A church bell." (Pause 5 seconds.)

"Question P: When is the best time to mend a leaky roof?

One: While it is raining.
Two: As soon as the roof is dry after the rain.
Three: Just before it rains again." (Pause 5 seconds.)

"Question Q: There is a saying that it is hard to teach an old dog new tricks. This means,

One: It is easier to learn while we are young.
Two: New tricks are hard to teach.
Three: Dogs do not learn tricks easily." (Pause 5 seconds.)

"Question R: What does pity mean? — pity.

One: To feel sorry for some one.
Two: To hate some one.
Three: To give a beggar food." (Pause 5 seconds.)

"Question S: There is a saying that a stitch in time saves nine. It means,

One: It will save nine dollars.
Two: It is better to mend small tears before they get bigger.

Three: Be careful not to tear your clothes." (Pause 5 seconds.)

" Question T: There is a saying: 'Don't cry over spilt milk.' It means,

One: Crying does not bring back the milk.

Two: It is foolish to worry over things we can't help.

Three: The tears might fall in the milk." (Pause 5 seconds.)

" Now lay your pencils down and turn your booklets over to the first page." Have monitors collect the booklets.

III. DIRECTIONS FOR SCORING

General Plan

Each test consists of a certain number of items, defined below. Each item is answered either right or wrong; if right it counts one point, if wrong no points. There are no partial credits. Erasures and corrections are permitted in all tests but Test 4. The number of items in the eight tests are respectively 16, 12, 12, 10, 7, 8, 10, 10, making a total possible score of 85 points.

The correct answers to the items of Tests 1, 3, 5, 6, 7, and 8 are shown in the back of the Manual (pages 10 to 12). The correctness of items of Tests 2 and 4 are self-evident. It should be noted that the correct answers in Tests 6, 7, and 8 appear in a regular manner which renders the use of stencils unnecessary and aids in quickly detecting incorrect answers. It is suggested that each correct item be indicated by a check mark (✓) or each incorrect item by a cross (×), or that both checks and crosses be used. The score in each test (number of items answered correctly) is to be placed on the dotted line in the lower corner of the page. These will be copied afterward on to the front page of the booklet or on to the Class Record. The sum of the test scores constitutes the Total Score — the measure of the pupil's Mental Ability.

Special Directions

Test 1. There are 16 items, corresponding respectively to the 16 directions given for the test. Score each according to the *apparent intent* of the pupil, disregarding crudeness of drawing.

Item 1. In this item, for example, anything resembling a tail attached to the proper drawing of a cat will count as correct.

Items 3 *to* 8. It may happen that in addition to the correct symbol under some drawing, the pupil has placed another and incorrect symbol. This latter should be disregarded and if otherwise correct the item should be counted right. Thus, in Form A, if a circle has been placed under the teddy bear, which is correct, and also a cross, which is incorrect, the item will count as correct.

Items 10 *and* 11. If more than one chick or hand is crossed out, the item counts as wrong.

Items 12 *and* 13. If in either item more than the two correct drawings are crossed out or dotted, the item counts as wrong.

Items 14 *and* 15. The symbols must be wholly within the correct spaces, and there must be no other marks in the drawings.

Test 2. In the first row the first two drawings count as one item, the second two as one item, etc., making four items in the first row. In each succeeding row the first four drawings count as one item and the second four as one item, making two items in each row after the first. Each correct item counts one point. Maximum score, 12 points.

Note carefully if the proper symbols have been placed under the drawings in the first two rows. If so, all succeeding symbols may be counted as correct without inspection;[1] if not, succeeding rows must be inspected and are credited only where found correct. Incomplete or only partially correct items count nothing.

Test 3. Each drawing properly completed counts one point. Maximum score, 12 points. No partial credits are given. Inaccuracy of drawing is not considered, only the evident intention. If the right answer is given to any item, together with something else that is reasonably lacking, count the item as correct — as, for example, in Form A, if pupils are drawn in the eyes in Item 1, or the handle of the pistol is shaded. However, if too much is drawn in, the item counts as wrong — as, for example, in Form A, if other circles in Item 8 besides the central one are completed, or if more than one square in the checkerboard is blacked.

Test 4. Each square through which the line is successfully drawn counts one point, — that is, without crossing a line or entering a wrong passage, — provided, however, that slight cutting of corners, etc., apparently only through awkwardness, do not count off.

Test 5. Each line of drawings correctly answered counts one point. Maximum score, 7 points. Count off one point from the score if the figures are not placed in the small squares as directed.

Test 6. Each line of drawings correctly answered counts one point. Maximum score, 8 points. If two or more answers are given to any item, count that item wrong.

Tests 7 and 8. Each item counts one point. Maximum score in each test, 10 points. If more than one answer is given to any item, count that item wrong.

In scoring Tests 6, 7, and 8, the scorer should note the regular appearance of the correct answers. This may be committed to memory in a few moments, after which no reference is needed to the Table of Answers.

Recording Scores

For convenience in recording scores a Class Record is furnished in each package of test booklets. The copying of the scores in the separate tests on to the Class Record is optional.

IV. DETERMINATION OF NORMS

The median or middle score of unselected children of a given age is called the normal score or *norm* for that age. The norms for the Primary Examination for ages 5 to 15 are shown in Table 4.

[1] It has been found that when the first two rows are correct, it almost never happens that errors are made thereafter. If it should be noted incidentally that there are errors in succeeding rows, credit should be deducted accordingly.

TABLE 1

SHOWING THE DISTRIBUTIONS OF SCORES OF PUPILS OF GRADES ONE TO FIVE, ALL AGES COMBINED

(*Primary Examination*)

SCORE / GRADE	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	TOTALS
1	44	49	54	53	40	28	23	20	14	5		1						331
2	4	8	22	45	67	90	68	87	86	55	37	23	11	3	3	1		610
3	1	0	1	5	7	24	43	64	93	106	106	101	69	32	16	5		673
4					2	11	11	27	50	74	87	103	90	73	44	17	2	591
5											3	10	19	26	38	19	5	120

The table of norms is based upon the scores of 2325 pupils throughout the country. The pupils whose scores were received were distributed in the grades as shown in Table 2. Their scores were distributed as shown in Table 1.

The norms for the Primary Examination, given in Table 4, were derived from the 2325 scores referred to in Table 2 by the process of augmenting the number of cases for each grade

TABLE 2

SHOWING THE DISTRIBUTION BY GRADES OF PUPILS TAKING THE PRIMARY EXAMINATION

GRADE	NUMBER OF PUPILS
1	331
2	610
3	673
4	591
5	120

to accord with the ratios of pupils actually in Grades 1, 2, 3, 4, and 5 (Bonner: Bulletin No. 24, 1920, Bureau of Education, page 91). The procedure for this correction is explained fully in the Manual of Directions for the Advanced Examination, page 7.

It will be noted that the norms in Table 4 run up to 100, whereas the maximum score in the test is 85 points. This simply means that if the test had been extended so as to be capable of adequately testing normal 15-year children, the

TABLE 3

REPRESENTATIVE PERCENTILE SCORES

GRADE	PERCENTILE SCORES		
	25%	50%	75%
1	9	17	27
2	25	35	45
3	42	50	57
4	48	57	64
5	65	71	75

norm in the test for a child of 15 years 11 months would probably be about 100 points. These high norms are to be used just as are the lower ones for finding IQ's, etc. (See page 9.)

MENTAL AGE

The term Mental Age has arisen in connection with the Binet-Simon Tests. To say that a pupil has a mental age of 8 years means that he has the mental ability of a normal 8-year child. In general, then, the mental age of a pupil is the age of the normal child having his degree of mental ability.

There are, however, degrees of mental ability attained by bright individuals at or nearing maturity which are above that normal for any age, just as some individuals attain heights above the median of adults. In order to express those degrees of mental ability in terms of "mental age," the mental age scale has been extended artificially in the upper ranges for use with the Binet-Simon Tests. For a more complete explanation of this point see Chapter XIII of *Statistical Method in Educational Measurement*, by Arthur S. Otis, published by World Book Company.

TABLE 4

NORMS FOR PRIMARY EXAMINATION (Revised November, 1925)

YEARS	5	6	7	8	9	10	11	12	13	14	15
Months											
0 . .	0	10	22	35	47	60	71	77	83	89	95
1 . .	0	11	23	36	48	61	71	77	83	89	95
2 . .	0	12	24	37	49	62	72	78	84	90	96
3 . .	1	13	25	38	50	63	72	78	84	90	96
4 . .	2	14	26	39	51	64	73	79	85	91	97
5 . .	3	15	27	40	52	65	73	79	85	91	97
6 . .	4	16	28	41	54	66	74	80	86	92	98
7 . .	5	17	30	42	55	67	74	80	86	92	98
8 . .	6	18	31	43	56	68	75	81	87	93	99
9 . .	7	19	32	44	57	69	75	81	87	93	99
10 . .	8	20	33	45	58	69	76	82	88	94	100
11 . .	9	21	34	46	59	70	76	82	88	94	100

To find the Binet Mental Age of a pupil from his score in the Primary Examination, consult Table 5, on page 8.

A mental age obtained from this table is the most probable Binet Mental Age that corresponds to the given score on the Primary Examination. For some as yet unexplained reason, for pupils of a given chronological age the variability of the distribution of their mental ages obtained from a group test tends to be greater than the variability of such a distribution obtained from the Binet test. That is, for a dull pupil the mental age obtained from Table 5 will tend to be too low and for a bright pupil it will tend to be too high. Therefore IQ's should not be computed from this table, but from Table 6 (page 9).

V. INTERPRETATION OF RESULTS

Intelligence and Brightness

There are two aspects of the mind of a child that must not be confused. One is his degree of *mental ability* and the other is his degree of *brightness*.

Mental ability is that growing ability in a child which enables him, year by year, to think more abstractly and solve more difficult problems. Growth in mental ability may be thought of as growth in thinking power.

Brightness is that fixed quality of mind which determines the rate at which a child's thinking power shall grow. It is differences in brightness that cause children of the same age to differ in mental ability and that enable some individuals to reach ultimately a higher level of intellectual power than others.

Mental ability is measured in terms of score in a mental ability test, while brightness is measured by the so-called Intelligence Quotient (see page 9). These are derived measures and are obtained only by consideration of a pupil's score or mental age in the light of the score or mental age that is normal for the age of the pupil in question.

TABLE 5

The Binet Mental Age Corresponding to Each Score in the Primary Examination

Score	M A	Score	M A	Score	M A	Score	M A	Score	M A	Score	M A
1	5:3	16	6:6	31	7:8	46	8:11	61	10:1	76	11:11
2	5:4	17	6:7	32	7:9	47	9:0	62	10:2	77	12:1
3	5:5	18	6:8	33	7:10	48	9:1	63	10:3	78	12:3
4	5:6	19	6:9	34	7:11	49	9:2	64	10:4	79	12:5
5	5:7	20	6:10	35	8:0	50	9:3	65	10:5	80	12:7
6	5:8	21	6:11	36	8:1	51	9:4	66	10:6	81	12:9
7	5:9	22	7:0	37	8:2	52	9:5	67	10:7	82	12:11
8	5:10	23	7:1	38	8:3	53	9:6	68	10:8	83	13:1
9	5:11	24	7:2	39	8:4	54	9:6	69	10:10	84	13:3
10	5:0	25	7:3	40	8:5	55	9:7	70	10:11	85	13:5
11	6:1	26	7:4	41	8:6	56	9:8	71	11:1		
12	6:2	27	7:5	42	8:7	57	9:9	72	11:3		
13	6:3	28	7:6	43	8:8	58	9:10	73	11:5		
14	6:4	29	7:7	44	8:9	59	9:11	74	11:7		
15	6:5	30	7:7	45	8:10	60	10:0	75	11:9		

The term Intelligence unfortunately has been used by nearly all writers both as meaning mental ability and as meaning brightness, and much confusion of thought has arisen on account of this double usage. Pending the standardization of the definition of the word Intelligence, it has seemed best to avoid its use when necessary to distinguish between mental ability and brightness.

The hypothetical individual of exactly normal or average brightness progresses in mental growth in such a manner that at each year of age he attains a score just equal to the median or middle score of children of that age. The above hypothetical individual of exactly normal brightness, if tested at the age of 8 years, would make a score in the Primary Examination of 35 points; if tested at the age of 9 years, his score would be 47 points, etc. His progress in terms of score is approximately uniform until the age of about 11 years, when the yearly increments of growth in terms of score decrease until the age of 15 years. According to the norms for the Advanced Examination, growth apparently continues until the age of 18 years, beyond which apparently no further growth takes place. At 18 years of age an individual's natural mental ability is fully developed. Thereafter he merely acquires knowledge, experience, wisdom, and so on.

Of several hundred pupils taken at random from the school population of the country, whose " age last birthday " was 7 years and whose average age therefore was 7 years and 6 months, the median score in the Primary Examination was 28 points. We should expect the hypothetical child of exactly normal brightness, therefore, at the age of 7 years and 6 months to attain a score of 28 points. We find, however, that the actual scores of these pupils range from almost zero to nearly 80, as shown in Table 7 (page 10).

This wide range of scores of a group of pupils of the same age is due to the fact that certain children have an innate capacity for greater mental achievement than others, which operates to give them, chiefly during the early years of their mental development, an advance over their less fortunate fellows. This innate capacity we have called *Brightness*. That is, the greater the capacity for mental development, or the greater the potential development, the greater the degree of brightness. A child who exceeds just one half of the children of his age in mental ability and whose score is therefore just equal to the norm for that age is considered just *normal*. If a pupil obtains a score which is 25 points above the norm for his age, we may say that he has an *Increment of Score* of 25 points; if his score falls short of the norm by 15 points, we may say that he has a *Decrement of Score* of 15 points. Either the Increment of Score or the Decrement of Score is a *Deviation from the Norm*. Those who exceed more than half of the children of their own age and who consequently have an Increment of Score are therefore brighter than normal, and those who exceed less than half and have a Decrement of Score are duller than normal. Broadly speaking, however, the term " normal " is used to characterize all those who fall within the middle half of the group as distributed on the scale of brightness. Usually only those who fall in the upper quarter are termed bright and only those who fall in the lower quarter are termed dull.

Percentile Rank

A pupil who exceeds just 50 per cent of the children of his age in Intelligence is said to have a *Percentile Rank* (PR) of 50. One who exceeds just 75 per cent of the children of his age in Intelligence is said to have a Percentile Rank of 75, etc. It may be seen, therefore, that the range of Percentile Ranks is from 0 to 100. A PR of 50 means exact normality, etc.

Now it is accepted as a fundamental fact that in most cases a child who is above normal at one age will be above normal at all ages, and a child who is below normal will always be below normal. Moreover, the degree of brightness of an individual is expected to remain approximately constant. Were this not so, prognostication would be impossible. Intelligence measurement would be of little value.[1]

This means that if an 8-year child exceeds just 50 per cent of 8-year-olds in mental ability, — being therefore a normal

[1] Exceptions to this rule are noted in certain special instances, particularly in the case of feeble-minded persons.

child, — he will be expected to exceed approximately 50 per cent of children of his age at any later time and hence, when an adult, to exceed 50 per cent of adults in mental ability. That is, he maintains a constant Percentile Rank of 50. Similarly, an 8-year child who exceeds 75 per cent of 8-year-olds in mental ability will be expected to exceed 75 per cent of children of his age at any later time and hence ultimately to exceed in mental ability 75 per cent of adults, etc. That is, an individual's Percentile Rank is assumed to remain approximately constant. The Percentile Rank of an individual, therefore, is another measure of his degree of brightness. (See Table 6 for the percentile rank corresponding to each intelligence quotient.)

Directions for Finding an IQ

In view of the desire on the part of a number of examiners to express the measures of brightness of their pupils in terms of Intelligence Quotient, Table 6 is provided.

The " IQ " of a pupil found from this table is not the same as would be obtained by dividing his mental age obtained from Table 4 by his chronological age, but is, nevertheless, more nearly equal to the IQ that would be obtained from the Binet-Simon Tests than an IQ found as above.

To find the IQ of a pupil, find the difference between his score and the norm for his age. (Norms are given in Table 4.) Call this difference the " Deviation of Score " (DS). Find the IQ corresponding to this Deviation of Score in Table 6.

The table is read as follows: If a pupil made a score 0 points higher or lower than the norm for his age, his IQ is 100 and he exceeds 50 per cent of pupils of his age in mental ability. If his score is 1 point above the norm for his age, his IQ is 101 and he exceeds 53 per cent of pupils of his age in mental ability. If his score is 1 point below the norm for his age, his IQ is 99 and he exceeds 47 per cent of pupils of his age in mental ability, etc.

TABLE 6[1]

For Finding the Binet IQ by the Advanced Examination

Deviation of Score	Plus Deviation		Minus Deviation	
	IQ	PR	IQ	PR
0	100	50	100	50
1	101	53	99	47
2	102	57	98	43
3	103	60	97	40
4–5	104	63	96	37
6	105	66	95	34
7	106	69	94	31
8	107	72	93	28
9–10	108	75	92	25
11	109	77.5	91	22.5
12	110	80	90	20
13	111	82	89	18
14–15	112	84	88	16
16	113	86	87	14
17	114	88	86	12
18	115	89	85	11
19–20	116	91.1	84	8.9
21	117	92.4	83	7.6
22	118	93.55	82	6.45
23	119	94.4	81	5.6
24–25	120	95.4	80	4.6
26	121	96.1	79	3.9
27	122	96.8	78	3.2
28	123	97.3	77	2.7
29–30	124	97.8	76	2.2
31	125	98.2	75	1.8
32	126	98.58	74	1.42
33	127	98.84	73	1.16
34–35	128	99.09	72	.91
36	129	99.27	71	.73
37	130	99.43	70	.57
38	131	99.54	69	.46
39–40	132	99.65	68	.35
41	133	99.72	67	.28
42	134	99.79	66	.21
43	135	99.84	65	.16
44–45	136	99.88	64	.12
46	137	99.90	63	.10
47	138	99.93	62	.07
48	139	99.95	61	.05
49	140	99.96	60	.04

VI. USES OF INTELLIGENCE TESTS

A comprehensive presentation of the uses of intelligence tests will be found in Dickson's *Mental Tests and the Classroom Teacher* (World Book Company). Some of these purposes are enumerated here.

Classification. The pupils in any class or school fall into three general types: (1) the average pupils, to whom the work and organization of the school are best fitted and who do fairly well; (2) the dull, who are slow in learning and have difficulty in understanding, and who are usually pushed ahead in the grades because of size or age; and (3) the bright, who learn quickly and easily and much of whose time during the day is, for that reason, necessarily unoccupied by school work.

In general the dull pupil is dull in all his work, the bright pupil is uniformly bright, and the average is uniformly average, although marked exceptions to this rule do appear. The work of the schools will then be most effective if it is determined in which of the three groups each pupil falls and if the work is adapted to the abilities of the pupils in each group. The duller pupils must be expected to learn more slowly and to require more simple and thorough presentation. The bright pupils learn so quickly that an enriched curriculum must be provided for them so that all their time in school will be occupied with activities of educational value to them. It is to these exceptional children that the nation must look for the creative genius and leadership by means of which society can evolve a greater civilization.

Perhaps the chief value of intelligence measurement, then, is the scientific (as well as rapid and accurate) classification of pupils in regard to their native capacities to learn, in order

[1] Dr. L. M. Terman, author of the Stanford Revision of the Binet-Simon Intelligence Scale, has stated that the semi-interquartile range of the distribution of IQ's obtained by this test is 8 points (*The Measurement of Intelligence*, pages 78 ff., Houghton Mifflin Company, 1916). That is, a pupil who exceeds 75 per cent of pupils of his age in mental ability obtains an IQ of 108. Therefore, Table 6 has been constructed so that any pupil whose score exceeds the scores of 75 per cent of pupils of his age will obtain an IQ of 108. Consequently, of course, the percentile rank corresponding to the IQ of 108 is necessarily 75. The other IQ's and percentile ranks in the table were worked out on this basis.

TABLE 7

SHOWING THE DISTRIBUTIONS OF SCORES IN THE PRIMARY EXAMINATION FOR AGE GROUPS SIX TO TWELVE. BASED ON 2325 CASES. DISTRIBUTIONS AUGMENTED

AGES	SCORES																	TOTALS
	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	
5 : 0 to 5 : 11	6	8	4	2			2											
6 : 0 to 6 : 11	59	65	70	62	56	43	29	23	11	8	1	1						428
7 : 0 to 7 : 11	21	27	31	62	50	58	50	43	65	36	22	15	15	3	2	1		501
8 : 0 to 8 : 11	2	9	19	23	22	48	34	55	69	69	70	59	31	17	7	3		537
9 : 0 to 9 : 11	2	1	2	9	13	22	26	41	53	48	67	95	71	42	38	7	5	542
10 : 0 to 10 : 11	2		2	3	4	8	15	22	34	45	44	57	89	62	102	56	1	546
11 : 0 to 11 : 11	0	1	2	1	4	3	8	13	12	17	18	25	17	58	54	23	6	262
12 : 0 to 12 : 11	1			2	1	3	2	8	8	12	16	11	32	49	28	17	15	205

to provide for the separate teaching of pupils who differ markedly in ability to progress in school.

Feeble-minded and gifted. At one extreme there are found pupils in schools who are not able to profit from school work in the usual school organization. The more serious cases should be placed in institutions for the feeble-minded. The less serious cases should be placed in special classes.

At the other extreme there are found the exceptionally brilliant pupils who are not challenged to an appreciable degree by the usual school work. They too should be segregated, so that they will be in classes with pupils like themselves and provided with a specially enriched curriculum that will develop to the greatest possible extent their superior mental abilities and their possibilities for social and physical development.

Vocational guidance. Intelligence tests can be used to determine roughly the level of the vocation that a pupil may safely strive to prepare for. For example, it is known that for success in the professions — medicine, law, engineering, etc. — a high degree of general ability is required. On the other hand, for unskilled labor a fairly low level of general ability ordinarily suffices. For more precise guidance special tests, aptitude tests, must be used. Whether a particular boy or girl should prepare for one vocation or another depends on his tastes and temperament, his previous experience, his special aptitudes as a result of the foregoing, his financial resources, immediate opportunities, etc. When these and his intelligence rating are known, vocational guidance becomes not a matter of measurement, but of judgment.

Problem pupils. Much light can be thrown on the reason for delinquency or other types of problems existing among school children, by their intelligence ratings. For this purpose the services of a trained psychologist must be obtained. Many school systems employ psychologists and visiting teachers to study and correct problem cases. The intelligence test is an important part of their technique.

Intelligence tests can also be used to advantage in penal institutions and in criminal cases, since among criminals a much larger percentage are feeble-minded than the percentage of feeble-minded in the population at large. Such tests will help in understanding the criminal better and in making more just and suitable the punishment or correction to be applied.

Validity of the Otis Group Intelligence Scale. For a discussion of the validity of the test as a measure of that which we have called general mental ability, the reader is referred to Otis, Arthur S., "An Absolute Point Scale for the Measurement of Intelligence," *Journal of Educational Psychology*, May and June, 1918, and Terman, L. M., *The Measurement of Intelligence* (Houghton Mifflin Company, Boston, Massachusetts).

KEY FOR SCORING

ANSWERS, PRIMARY EXAMINATION (*Forms A and B*)

TEST	5	6	7	8
Item				
1	2–1–3	3	O	2
2	2–3–1	2	S	2
3	1–3–2	1	S	3
4	2–1–4–3	2	O	3
5	3–1–2–4	3	O	2
6	3–1–5–4–2	4	S	2
7	1–3–5–2–4	5	S	1
8		4	O	1
9		3	O	2
10			S	2

(*Key continued on pages 11 and 12*)

KEY FOR SCORING — *Continued*

PLATE I

ANSWERS, PRIMARY EXAMINATION, TEST 1 (*Form A*)

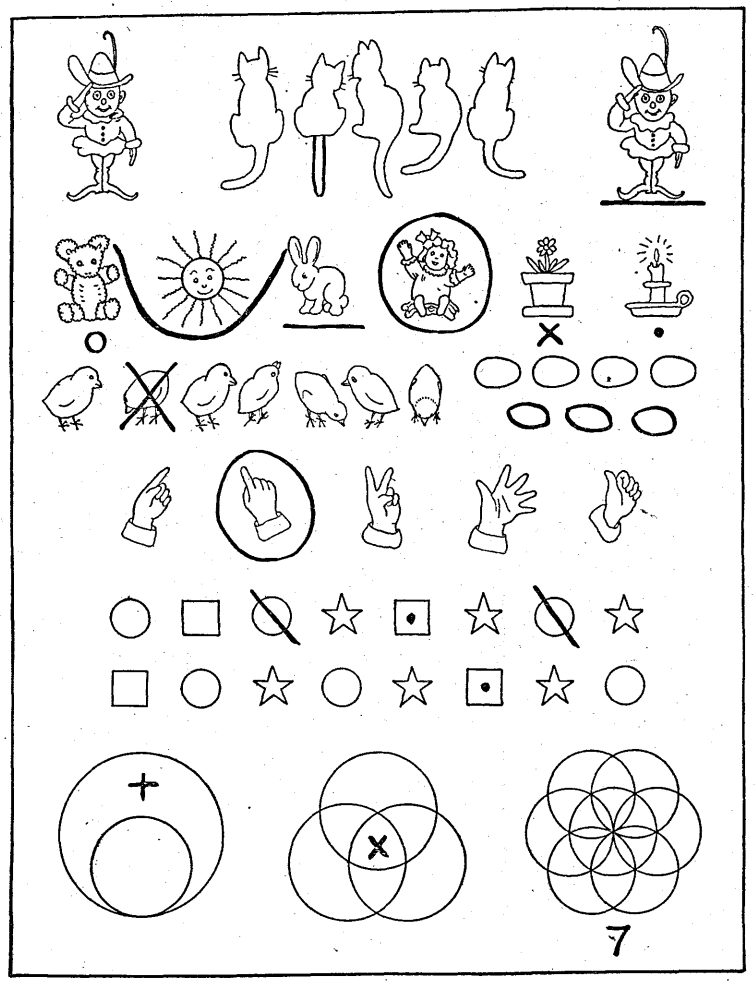
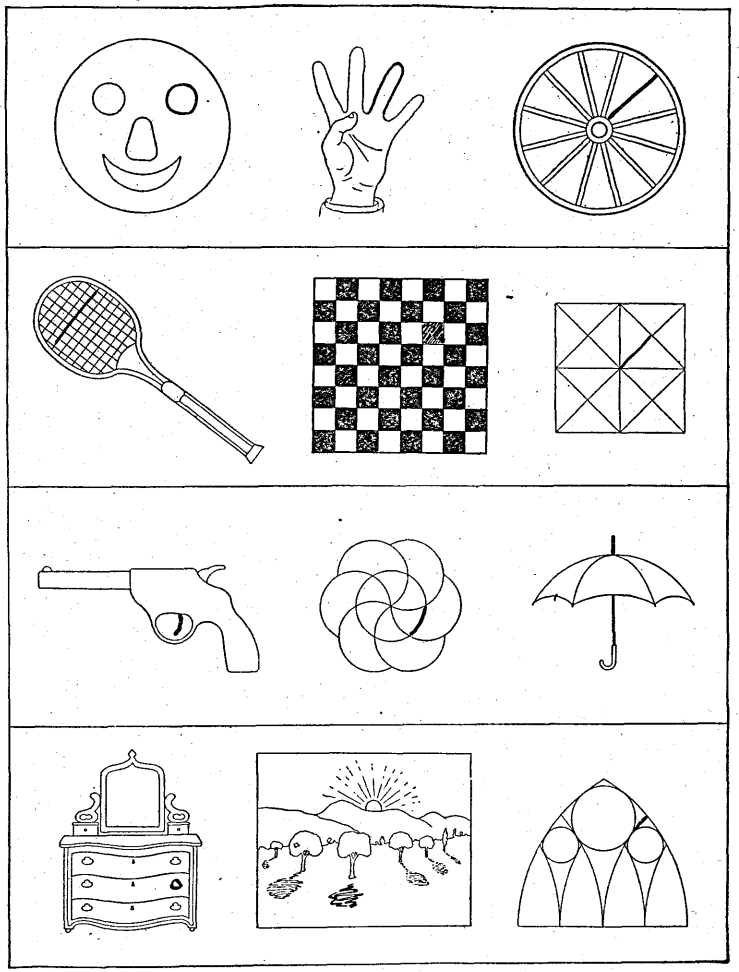


PLATE II

ANSWERS, PRIMARY EXAMINATION, TEST 3 (*Form A*)



KEY FOR SCORING — *Continued*

PLATE III

ANSWERS, PRIMARY EXAMINATION, TEST 1 (*Form B*)

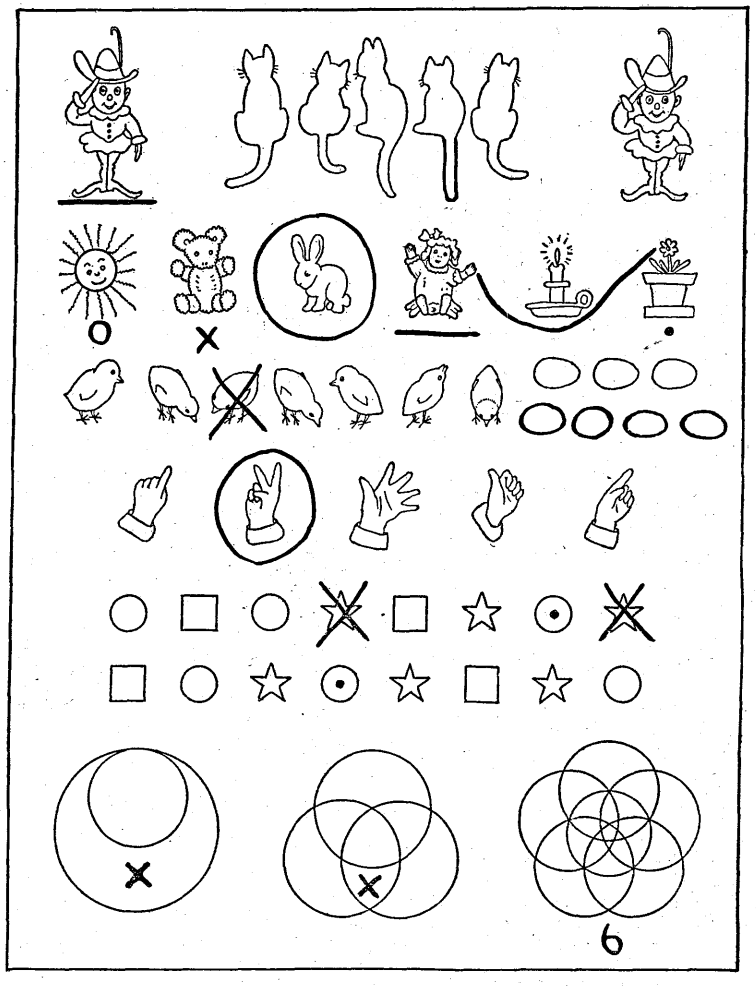
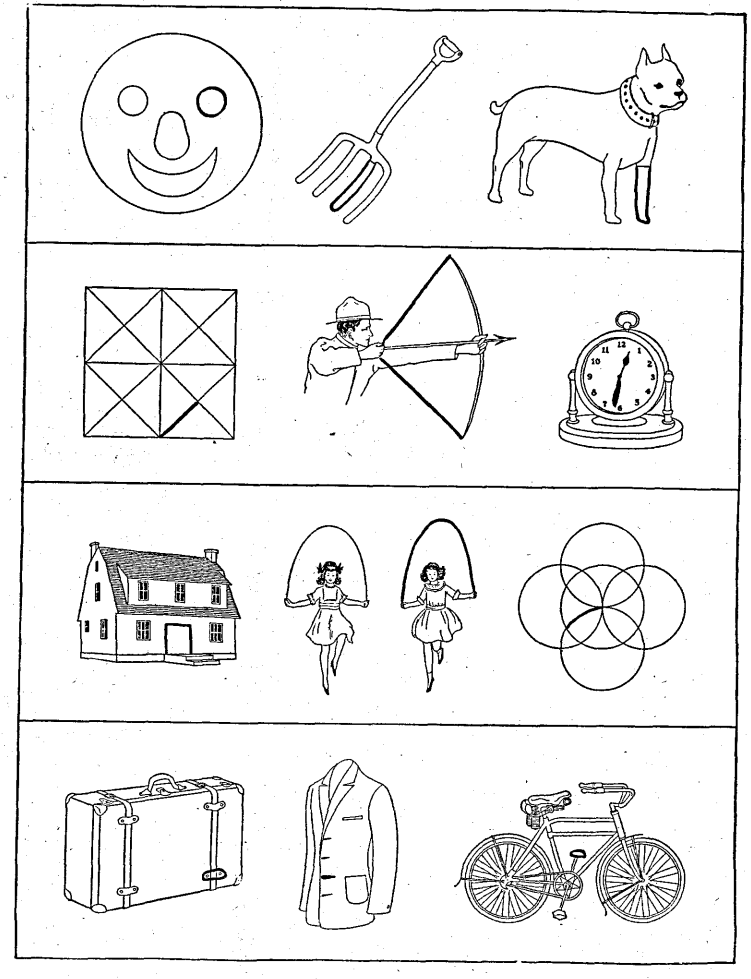


PLATE IV

ANSWERS, PRIMARY EXAMINATION, TEST 3 (*Form 3*)



OTIS SELF-ADMINISTERING TESTS OF MENTAL ABILITY

By ARTHUR S. OTIS, PH.D.

Formerly Development Specialist with Advisory Board, General Staff, United States War Department

INTERMEDIATE EXAMINATION: FORM A

For Grades 4–9

20 Score.....

Read this page. Do what it tells you to do.

Do not open this paper, or turn it over, until you are told to do so. Fill these blanks, giving your name, age, birthday, etc. Write plainly.

Name..... Age last birthday.....years
First name, initial, and last name

Birthday..... Teacher..... Date..... 192...
Month Day

Grade..... School..... City.....

This is a test to see how well you can think. It contains questions of different kinds. Here is a sample question already answered correctly. Notice how the question is answered:

Sample: Which one of the five words below tells what an apple is?
1 flower, 2 tree, 3 vegetable, 4 fruit, 5 animal.....(4)

The right answer, of course, is "fruit"; so the word "fruit" is underlined. And the word "fruit" is No. 4; so a figure 4 is placed in the parentheses at the end of the dotted line. This is the way you are to answer the questions.

Try this sample question yourself. Do not write the answer; just draw a line under it and then put its number in the parentheses:

Sample: Which one of the five things below is round?
1 a book, 2 a brick, 3 a ball, 4 a house, 5 a box.....( )

The answer, of course, is "a ball"; so you should have drawn a line under the words "a ball" and put a figure 3 in the parentheses. Try this one:

Sample: A foot is to a man and a paw is to a cat the same as a hoof is to a — what?
1 dog, 2 horse, 3 shoe, 4 blacksmith, 5 saddle.....( )

The answer, of course, is "horse"; so you should have drawn a line under the word "horse" and put a figure 2 in the parentheses. Try this one:

Sample: At four cents each, how many cents will 6 pencils cost?.....( )

The answer, of course, is 24, and there is nothing to underline; so just put the 24 in the parentheses.

If the answer to any question is a number or a letter, put the number or letter in the parentheses without underlining anything. Make all letters like printed capitals.

The test contains 75 questions. You are not expected to be able to answer all of them, but do the best you can. You will be allowed half an hour after the examiner tells you to begin. Try to get as many right as possible. Be careful not to go so fast that you make mistakes. Do not spend too much time on any one question. No questions about the test will be answered by the examiner after the test begins. Lay your pencil down.

Do not turn this page until you are told to begin.

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 OSATMA: IE: A-16

EXAMINATION BEGINS HERE.

1. Which one of the five things below does not belong with the others? (Do not write on these dotted lines.)
   1 potato, 2 turnip, 3 carrot, 4 stone, 5 onion..... ( )
2. Which one of the five words below tells best what a saw is?
   1 something, 2 tool, 3 furniture, 4 wood, 5 machine..... ( )
3. Which one of the five words below means the opposite of west?
   1 north, 2 south, 3 east, 4 equator, 5 sunset..... ( )
4. A hat is to a head and a glove is to a hand the same as a shoe is to what?
   1 leather, 2 a foot, 3 a shoestring, 4 walk, 5 a toe..... ( )
5. A child who knows he is guilty of doing wrong should feel (?)
   1 bad, 2 sick, 3 better, 4 afraid, 5 ashamed..... ( )
6. Which one of the five things below is the smallest?
   1 twig, 2 limb, 3 bud, 4 tree, 5 branch..... ( )
7. Which one of the five things below is most like these three: cup, plate, saucer?
   1 fork, 2 table, 3 eat, 4 bowl, 5 spoon..... ( )
8. Which of the five words below means the opposite of strong?
   1 man, 2 weak, 3 small, 4 short, 5 thin..... ( )
9. A finger is to a hand the same as a toe is to what?
   1 foot, 2 toenail, 3 heel, 4 shoe, 5 knee..... ( )
10. Which word means the opposite of sorrow?
    1 sickness, 2 health, 3 good, 4 joy, 5 pride..... ( )
11. Which one of the ten numbers below is the smallest? (Tell by letter.)
    A 6084, B 5160, C 4342, D 6521, E 9703, F 4296, G 7475, H 2657, J 8839, K 3918 ( )
12. Which word means the opposite of pretty?
    1 good, 2 ugly, 3 bad, 4 crooked, 5 nice..... ( )
13. Do what this mixed-up sentence tells you to do.
    number Write the the in 5 parentheses..... ( )
14. If we believe some one has committed a crime, but we are not sure, we have a (?)
    1 fear, 2 suspicion, 3 wonder, 4 confidence, 5 doubtful..... ( )
15. A book is to an author as a statue is to (?)
    1 sculptor, 2 marble, 3 model, 4 magazine, 5 man..... ( )
16. Which is the most important reason that words in the dictionary are arranged alphabetically?
    1 That is the easiest way to arrange them. 2 It puts the shortest words first. 3 It enables us to find any word quickly. 4 It is merely a custom. 5 It makes the printing easier.. ( )
17. Which one of the five things below is most like these three: plum, apricot, apple?
    1 tree, 2 seed, 3 peach, 4 juice, 5 ripe..... ( )
18. At 4 cents each, how many pencils can be bought for 36 cents?..... ( )
19. If a person walking in a quiet place suddenly hears a loud sound, he is likely to be (?)
    1 stopped, 2 struck, 3 startled, 4 made deaf, 5 angered..... ( )
20. A boy is to a man as a (?) is to a sheep.
    1 wool, 2 lamb, 3 goat, 4 shepherd, 5 dog..... ( )
21. One number is wrong in the following series. What should that number be? (Just write the correct number in the parentheses.)
    1 6 2 6 3 6 4 6 5 6 7 6..... ( )
22. Which of the five things below is most like these three: horse, pigeon, cricket?
    1 stall, 2 saddle, 3 eat, 4 goat, 5 chirp..... ( )
23. If the words below were rearranged to make a good sentence, with what letter would the last word of the sentence begin? (Make the letter like a printed capital.)
    nuts from squirrels trees the gather..... ( )
24. A man who betrays his country is called a (?)
    1 thief, 2 traitor, 3 enemy, 4 coward, 5 slacker..... ( )
25. Food is to the body as (?) is to an engine.
    1 wheels, 2 fuel, 3 smoke, 4 motion, 5 fire..... ( )
26. Which tells best just what a pitcher is?
    1 a vessel from which to pour liquid, 2 something to hold milk, 3 It has a handle, 4 It goes on the table, 5 It is easily broken..... ( )

Do not stop. Go on with the next page.

27. If George is older than Frank, and Frank is older than James, then George is (?) James.
1 older than, 2 younger than, 3 just as old as, 4 (cannot say which)..... ( )

28. Count each 7 below that has a 5 next after it. Tell how many 7's you count.
7 5 3 0 9 7 3 7 8 5 7 4 2 1 7 5 7 3 2 4 7 0 9 3 7 5 5 7 2 3 5 7 7 5 4 7..... ( )

29. If the words below were rearranged to make a good sentence, with what letter would the last word of the sentence begin? (Make the letter like a printed capital.)
leather shoes usually made are of..... ( )

30. An electric light is to a candle as a motorcycle is to (?)
1 bicycle, 2 automobile, 3 wheels, 4 speed, 5 police..... ( )

31. Which one of the words below would come first in the dictionary?
1 march, 2 ocean, 3 horse, 4 paint, 5 elbow, 6 night, 7 flown..... ( )

32. The daughter of my mother's brother is my (?)
1 sister, 2 niece, 3 cousin, 4 aunt, 5 granddaughter..... ( )

33. One number is wrong in the following series. What should that number be?
3 4 5 4 3 4 5 4 3 5..... ( )

34. Which of the five things below is most like these three: boat, horse, train?
1 sail, 2 row, 3 motorcycle, 4 move, 5 track..... ( )

35. If Paul is taller than Herbert and Paul is shorter than Robert, then Robert is (?) Herbert.
1 taller than, 2 shorter than, 3 just as tall as, 4 (cannot say which)..... ( )

36. What is the most important reason that we use clocks?
1 to wake us up in the morning, 2 to regulate our daily lives, 3 to help us catch trains, 4 so that children will get to school on time, 5 They are ornamental..... ( )

37. A coin made by an individual and meant to look like one made by the government is called(?)
1 duplicate, 2 counterfeit, 3 imitation, 4 forgery, 5 libel..... ( )

38. A wire is to electricity as (?) is to gas.
1 a flame, 2 a spark, 3 hot, 4 a pipe, 5 a stove..... ( )

39. If the following words were arranged in order, with what letter would the middle word begin?
Yard Inch Mile Foot Rod..... ( )

40. One number is wrong in the following series. What should that number be?
5 10 15 20 25 29 35 40 45 50..... ( )

41. Which word means the opposite of truth?
1 cheat, 2 rob, 3 liar, 4 ignorance, 5 falsehood..... ( )

42. Order is to confusion as (?) is to war.
1 guns, 2 peace, 3 powder, 4 thunder, 5 army..... ( )

43. In a foreign language, good food = Bano Naab
good water = Heto Naab
The word that means *good* begins with what letter?..... ( )

44. The feeling of a man for his children is usually (?)
1 affection, 2 contempt, 3 joy, 4 pity, 5 reverence..... ( )

45. Which of the five things below is most like these three: stocking, flag, sail?
1 shoe, 2 ship, 3 staff, 4 towel, 5 wash..... ( )

46. A book is to information as (?) is to money.
1 paper, 2 dollars, 3 bank, 4 work, 5 gold..... ( )

47. If Harry is taller than William, and William is just as tall as Charles, then Charles is (?) Harry.
1 taller than, 2 shorter than, 3 just as tall as, 4 (cannot say which)..... ( )

48. If the following words were arranged in order, with what letter would the middle word begin?
Six Ten Two Eight Four..... ( )

49. If the words below were rearranged to make a good sentence, with what letter would the third word of the sentence begin? (Make the letter like a printed capital.)
men high the a wall built stone..... ( )

50. If the suffering of another makes us suffer also, we feel (?)
1 worse, 2 harmony, 3 sympathy, 4 love, 5 repelled..... ( )

51. In a foreign language, grass = Moki
green grass = Moki Laap
The word that means *green* begins with what letter?..... ( )

Do not stop. Go on with the next page.

52. If a man has walked west from his home 9 blocks and then walked east 4 blocks, how many blocks is he from his home? ( )

53. A pitcher is to milk as (?) is to flowers.
1 stem, 2 leaves, 3 water, 4 vase, 5 roots ( )

54. Do what this mixed-up sentence tells you to do.
sum three Write two the four and of ( )

55. There is a saying, "Don't count your chickens before they are hatched." This means (?)
1 Don't hurry. 2 Don't be too sure of the future. 3 Haste makes waste. 4 Don't gamble ( )

56. Which statement tells best just what a fork is?
1 a thing to carry food to the mouth, 2 It goes with a knife, 3 an instrument with prongs at the end, 4 It goes on the table, 5 It is made of silver ( )

57. Wood is to a table as (?) is to a knife.
1 cutting, 2 chair, 3 fork, 4 steel, 5 handle ( )

58. Do what this mixed-up sentence tells you to do.
sentence the letter Write last this in ( )

59. Which one of the words below would come last in the dictionary?
1 alike, 2 admit, 3 amount, 4 across, 5 after, 6 amuse, 7 adult, 8 affect ( )

60. There is a saying, "He that scatters thorns, let him go barefoot." This means (?)
1 Let him who causes others discomforts bear them himself also. 2 Going barefoot toughens the feet. 3 People should pick up what they scatter. 4 Don't scatter things around ( )

61. If the following words were arranged in order, with what letter would the middle word begin?
Plaster Frame Wallpaper Lath Foundation ( )

62. In a foreign language,
many boys = Boka Hepo
many girls = Marti Hepo
many boys and girls = Boka Ello Marti Hepo
The word that means *and* begins with what letter? ( )

63. A statement which expresses just the opposite of that which another statement expresses is said to be a (?)
1 lie, 2 contradiction, 3 falsehood, 4 correction, 5 explanation ( )

64. There is a saying, "Don't look a gift horse in the mouth." This means (?)
1 It is not safe to look into the mouth of a horse. 2 Although you question the value of a gift, accept it graciously. 3 Don't accept a horse as a gift. 4 You cannot judge the age of a gift horse by his teeth ( )

65. Which one of the words below would come last in the dictionary?
1 hedge, 2 glory, 3 label, 4 green, 5 linen, 6 knife, 7 honor ( )

66. Which statement tells best just what a watch is?
1 It ticks, 2 something to tell time, 3 a small, round object with a chain, 4 a vest-pocket-sized time-keeping instrument, 5 something with a face and hands ( )

67. Ice is to water as water is to what?
1 land, 2 steam, 3 cold, 4 river, 5 thirst ( )

68. Which statement tells best just what a window is?
1 something to see through, 2 a glass door, 3 a frame with a glass in it, 4 a glass opening in the wall of a house, 5 a piece of glass surrounded by wood ( )

69. Which of the five words below is most like these three: large, red, good?
1 heavy, 2 size, 3 color, 4 apple, 5 very ( )

70. Write the letter that follows the letter that comes next after M in the alphabet ( )

71. One number is wrong in the following series. What should that number be?
1 2 4 8 16 24 64 ( )

72. An uncle is to an aunt as a son is to a (?)
1 brother, 2 daughter, 3 sister, 4 father, 5 girl ( )

73. If I have a large box with 3 small boxes in it and 4 very small boxes in each of the small boxes, how many boxes are there in all? ( )

74. One number is wrong in the following series. What should that number be?
1 2 4 5 7 8 10 11 12 14 ( )

75. There is a saying, "Don't ride a free horse to death." This means (?)
1 Don't be cruel. 2 Don't abuse a privilege. 3 Don't accept gifts. 4 Don't be reckless. ( )

If you finish before the time is up, go back and make sure that every answer is right.

OTIS SELF-ADMINISTERING TESTS OF MENTAL ABILITY

By ARTHUR S. OTIS, PH.D.
Formerly Development Specialist with Advisory Board, General Staff, United States War Department

MANUAL OF DIRECTIONS AND KEY (*Revised*)

For Intermediate and Higher Examinations

CONTENTS

INTRODUCTORY

Contents. In this manual will be found the complete directions for administering and scoring the Intermediate and Higher Examinations, directions for interpreting the scores in the light of the educational problems which the tests will help solve, and directions for applying the results of the test to the solution of those problems.

Scope. The Higher Examination together with the Intermediate Examination constitute the Otis Self-Administering Tests of Mental Ability, covering the range from the 4th grade to the university. The Higher Examination is designed for high school students and college freshmen. The Intermediate Examination is designed for Grades 4 to 9. The Higher and Intermediate Examinations are similar in form, but they differ in content and difficulty.

Forms. Each examination is issued in three alternative forms, Forms A, B, and C, alike except in content.

SPECIAL FEATURES

Self-administration. In each of these examinations provision is made for the student to read for himself on the first page of the examination booklet all the directions needed for the examination. As the 75 items constituting each examination are in a single list, these are answered by the examinee without interruption. The examiner, therefore, has merely to distribute the blanks, see that all understand the printed directions, and give the signal to begin. He may then leave the class in charge of an assistant. For this reason the tests have been called " self-administering " tests.

Simplified scoring. In addition to the underlining of the correct one of several alternative answers, as is customary in group tests of mental ability, provision is made in these examinations for placing the number of the answer in a single column at the edge of each page. This simplifies the scoring to the extent that the whole examination can be scored in less than one minute.

Variety of test material. The form of the examinations admits of the use of a wide variety of types of questions instead of the limited number of types in the ordinary examination.

Flexible time limit. Provision is made for administering the examinations with a time limit of either 20 or 30 minutes. The 20-minute time limit may be used for general survey purposes or with normal school and college students. The 30-minute time limit should be used when time allows, as it will give a more accurate measure.

Ease of figuring IQ's. A chart is provided by which the IQ of the examinee can be found directly from the score and age in years and months merely by locating a point on the intersection of two lines. No arithmetical calculation or reference to tables is necessary.

Improved Percentile Graph. There is provided in each package of Examinations a new form of percentile graph on which percentile curves may be drawn, if desired, showing vividly the distributions of scores of any group or groups of examinees. With each percentile graph is furnished a scale chart by which the drawing of the percentile curves is reduced to the simplest terms.

Interpretation Chart. A chart is provided upon which the scores of a class or school may be plotted and the pupils divided into fast-moving, regular, and slow-moving groups and regraded within these groups, or otherwise classified, merely by drawing lines on the chart. Account is taken of mental ability, brightness, and chronological age in classifying by this method. It is not necessary to use the Interpretation Chart in order to interpret scores in these tests. However, it will be found a distinct aid and convenience.

HISTORICAL

These examinations are modeled after a group test of mental ability designed by the author in January, 1918, for use in a large commercial establishment in Connecticut. In that test the principle of self-administration was embodied, involving the single list of questions, the printed initial directions, and the provision for answers in single columns.

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 OSATMA: MK-26

Acknowledgments

The author is indebted to many persons for helpful suggestions and criticisms in connection with the Self-Administering Tests of Mental Ability. Special mention is due the following, who gave hearty coöperation in the administration of tests for standardization purposes: Mr. J. C. Amon, Bellevue, Pennsylvania; Mr. H. H. Murphy, Hastings, New York; Mr. T. H. Schutte, State Teachers' College, Moorhead, Minnesota; Dr. John P. Herring, Bloomsburg State Normal School, Bloomsburg, Pennsylvania; Dr. Virgil E. Dickson, Oakland, California; Dr. E. E. Lewis, Rockford, Illinois; Mr. Henry D. Rinsland, Ardmore, Oklahoma; Mr. E. D. Price, Enid, Oklahoma; and Mr. Franklin Thomas, Professor of Civil Engineering, California Institute of Technology, Pasadena, California. Mrs. Otis has devoted many hours to scoring, tabulating, and correlating.

The author is indebted to Dr. E. E. Keener, Director of Instructional Research, Chicago Public Schools, and C. Everett Myers, Research Secretary, Pennsylvania State Education Association, for assistance in standardizing Form C.

Directions for Administering

Who may administer examination. Any teacher after a little preparation can satisfactorily administer either the Intermediate or Higher Examination. The best preparation for administering either is to take it. The principal should invite his teachers to take the examination and score their own papers. Any teacher who is interested in mental-ability testing should welcome the opportunity to experience the taking of an examination, as this will give her the best appreciation of what the examination tests. Those administering an examination should realize that it is very important that conditions be uniform throughout the school and must be the same in the school being tested as in every other school where the examination has been given. For this reason, everything which needs to be said in administering the test is given below in boldface type, and the teacher should give these instructions verbatim, reading if necessary. If one teacher urges the students to work as rapidly as possible and another teacher urges them to work as carefully as possible, the results may be entirely different and not comparable. The teacher, therefore, should say nothing that is not prescribed, except to make clear the meaning of what is on the first page of the examination blank.

When to give examination. The best time to give the examination is probably at the opening of school in the morning, although the time of day probably does not have a serious effect upon the score.

Directions for administering. To administer either the Intermediate or the Higher Examination, Form A, B, or C, begin by addressing the students as follows:

"We are going to give you this morning [afternoon] some new and interesting tests. We will now pass the test papers and as soon as you receive a paper you may begin to read the first page and do as it directs, filling the blanks, etc. Do not open or turn over the paper. Part of the test is to see if you can follow directions."

Have monitors pass the papers, one to each student, right side up. See that every student is supplied with two pencils (or a pen) and an eraser.

Allow a reasonable time for all to finish reading the first page and trying the samples. A few laggards may be disregarded. Then say, **"Is there any one who does not understand the first page?"** Give any explanations necessary to make sure that all understand what is explained on the first page.

If a time limit of 20 minutes is to be used, say, **"This will be a short test. You will be told to stop at the end of 20 minutes instead of 30. Find the number 20 in the upper left-hand corner of the page and make a ring around it."** Be sure that all do this.

Then say, **"Now turn the page and begin,"** and note the exact time. No further instructions are necessary.

If the principal or superintendent is administering the examination, he may now leave the class in charge of the teacher or an assistant, with instructions to give no further directions and answer no questions; to stop the work at the end of exactly 30 (or 20) minutes and have the papers collected. The person in charge during the examination will do well to move quietly about the room at the beginning of the examination and see that all are indicating the answers in a proper manner. If an examinee is found who is not placing the numbers in the parentheses, he should be told to do so.

Directions for Scoring

The correct answers to the 75 items of both forms of the Intermediate and Higher Examinations are given on the margins of this manual. To score the examination, open the manual to the pages containing the answers to the form of the examination to be scored, fold open the manual and clip the pages together. Place the manual over the examination paper so that the appropriate Key is adjacent to the answers given on the examination paper. Place a check mark after each correct answer or a cross after each incorrect or omitted answer, or both checks and crosses.

If two answers are given for any one item, count the item wrong. This is quite likely to occur with Item 55 in Form A of the Higher Examination.

Number 37 in Form A and Number 57 in Form B of the Higher Examination count as wrong if the alphabet has been marked in any way.

If a paper is found in which the examinee has omitted to place the numbers in the parentheses but has otherwise indicated the answers, the scorer should write in the parentheses the numbers representing the answers of the examinee so far as these may be determined, and then score accordingly, but deduct one point from the total score for failure to follow the direction to place the numbers in the parentheses.

If the examinee has failed to make all his letters like printed capitals, score the paper as if all letters were printed capitals, but deduct one point for failure to follow the direction.

Whenever an examinee has used an irregular method of taking the examination, score the paper according to the obvious intent of the examinee and then deduct one point for each general direction not followed. Indicate such deduction by placing a -1 with a circle around it opposite the first instance where the direction has not been followed. Let his score represent the fairest measure of his ability that can be estimated.

The score in the examination is the number of correct answers. First, count up the correct answers and write the number on

the margin of the last page. Then verify the score by counting the incorrect and omitted answers. Thus, suppose the number of correct answers counted is 40. Count the incorrect and omitted answers beginning 41, 42, etc., and see that you end with 75. Then enter the score in the space provided on the first page of the blank. Do not trust the counting of correct answers only, as it is very easy to make a mistake. The checking of correct answers should be gone over by a second scorer, for even the best scorers will make mistakes.

Recording Scores

The Class Record. The scores should be entered on the Class Record which is provided with each package of examination blanks. Before entering the scores, arrange the papers of a class either in alphabetical order or in the order of magnitude of the score, according to preference. Next, enter the name of each student and his age in years and months. Then enter his score in the proper column according to the time limit used. Directions for filling the remaining columns will be given under "Interpretation of Results."

20-Minute time limit. If a 20-minute time limit has been used, the scores may be transmuted into terms of 30-minute time-limit scores in order that they may be compared with norms or other 30-minute scores. This may be done by means of Table 1.

TABLE 1[1]

20-MIN.	30-MIN.	20-MIN.	30-MIN.	20-MIN.	30-MIN.	20-MIN.	30-MIN.	20-MIN.	30-MIN.
1	1	16	20	31	40	46	59	61	71
2	2	17	22	32	41	47	60	62	71
3	4	18	23	33	43	48	61	63	72
4	5	19	24	34	44	49	62	64	72
5	6	20	26	35	45	50	63	65	73
6	7	21	27	36	46	51	64	66	73
7	9	22	28	37	48	52	64	67	74
8	10	23	30	38	49	53	65	68	74
9	11	24	31	39	50	54	66	69	74
10	13	25	32	40	51	55	67	70	75
11	14	26	33	41	53	56	68	71	75
12	15	27	35	42	54	57	68	72	75
13	17	28	36	43	55	58	69	73	75
14	18	29	37	44	56	59	70	74	75
15	19	30	39	45	58	60	70	75	75

Standardization

Selection of items. In selecting items for the Intermediate and Higher Examinations, the Advanced Examination was drawn upon freely. An equal number of items of other types, some of which are new, were included in order that the examination might cover a large variety of questions and therefore afford a more comprehensive measure of mental ability. Preliminary editions containing more than enough items were administered to about 1000 high school students in Oakland, California, and Rockford, Illinois, and to 1000 grammar school pupils in Moorhead, Minnesota. These students were divided in each case into two groups, a "good group" and a "poor group." The same number were taken from each grade for both groups. The good group constituted the young students, and the poor group the old students. These groups had reached the same average educational status, therefore, but at different rates. Now it is the rate at which a student can progress through school that the mental-ability test is chiefly used to predict. Therefore this is believed to be the best criterion by which to judge the validity of each item that goes into the test. The number of times each item was passed by each group was then found and only those items chosen which showed a distinct gain in number of passes by the good group over the number of passes by the poor group in spite of the fact that the median age of the good group was over two years less than that of the poor group. Each item justified its inclusion, therefore, because it distinguished between students who progressed slowly and those who progressed rapidly.

Arrangement in order of difficulty. The items in each form of each examination have been arranged in the order of difficulty, according to the number of passes of each item by the students taking the preliminary editions.

Practice Effect

Whenever a second form of a test is given after a first form, especially when the two forms have been made very much alike, students tend to do better on the second test. The effect of the first test is generally termed "practice effect," but it may include a number of effects. Among these is general familiarity with the method, resulting in ability to get under way more quickly, lessened nervousness, memory of mode of attack of certain types of problems, etc.

A study was made of the effect of practice when a second form of the Intermediate or Higher Examination was given the next day after the first form. The average gain in the second score was 4 points in each case. Therefore in such a case 4 points would have to be subtracted from the score in the second test to make allowance for the effect of practice.

Interpretation of Results

Mental ability and brightness. There are two aspects of the mental quality of an individual which must not be confused. One is his degree of **mental ability** and the other his degree of **brightness.** The term "mental ability" refers to that innate mental quality which increases with age, whereas the term "brightness" refers to that constant quality which determines the rate of growth of the mental ability of an individual and the degree of mental ability which he will eventually reach.

Mental ability is measured by the individual's score in the test. A measure of his brightness is obtained by comparing his score with that of others of his own age. The distinction is best shown by reference to the Interpretation Chart.

The Interpretation Chart. An Interpretation Chart is provided in each package of Examinations to facilitate the interpretation of scores. Interpretation Charts for the Intermediate and Higher Examinations are given on the two sides of the same sheet. In the sample Interpretation Chart shown in Figure 1 (page 9) a point is plotted for each of the 276 pupils in Grades 5 to 8 of a grammar school. The height of each point

[1] This table was derived from a study of 20- and 30-minute scores in the Higher Examination only. It is therefore only approximate for the Intermediate Examination. It is assumed, however, that the 20-minute time limit will seldom be used with the Intermediate Examination.

1. (4)
2. (2)
3. (3)
4. (2)
5. (5)
6. (3)
7. (4)
8. (2)
9. (1)
10. (4)
11. (H)
12. (2)
13. (5)
14. (2)
15. (1)
16. (3)
17. (3)
18. (9)
19. (3)
20. (2)
21. (6)
22. (4)
23. (T)
24. (2)
25. (2)
26. (1)

represents the score of an individual in the Intermediate Examination according to the scale at the left. The horizontal position of each point represents the age of the individual according to the scale at the foot of the chart.

The normal or "average" individual of the age of just 10 years is expected to make a score of just 23 points.[1] The normal individual of the age of just 11 years is expected to make a score of just 31 points, etc., as indicated by the heavy curved line through the middle of the chart (best seen in the blank chart). This may be called the normal curve and shows the **norm** or normal score to be expected from an individual of any given age. The curve becomes level at the age of 18 years, as shown in the Interpretation Chart for the Higher Examination, and may be considered as extending to the right indefinitely beyond 18 years at the same level. The derivation of this curve will be described below.

Mental maturity. A child's mental ability increases from birth, year by year, month by month, just as does his height, until he reaches his maximum, when he is said to have reached mental maturity. The normal curve may be thought of as the curve of growth in mental ability of the hypothetical exactly normal individual.

The age at which mental maturity is reached is difficult to decide, since the amount of mental development during the last year in which there is any development is very slight. In the Interpretation Chart for the Higher Examination the age at which mental maturity is reached is taken to be 18 years.

While individuals may reach mental maturity at about the same age, they nevertheless reach it with widely differing amounts of mental ability, just as they reach mature adult stature at differing heights. The degree of mental ability at which the normal individual reaches mental maturity is also very difficult to determine, since it is not possible to obtain a large group of completely unselected individuals (chosen at random from the whole population) at the various ages between 15 and 18. The norm for adults (persons of 18 years or over), however, has been called 42 in the Higher Examination, as shown by the upper limit of the normal curve. This is the equivalent of 59 points in the Intermediate Examination. The choice of this norm for adults is only an estimate based on all available data.

Derivation of norms. The positions of the normal curves in the two charts were established according to the judgment of the author upon consideration of (1) the median scores of the various age groups among about 120,000 pupils whose scores in the Higher or Intermediate Examinations have been reported to date, (2) the median scores of the several grade groups in relation to the median ages of these grade groups, (3) the norms for the various ages obtained from the norm table for the Advanced Examination by means of tables for converting scores into terms of the Higher and Intermediate Examinations, (4) the correlations between scores in the Higher and Intermediate Examinations and mental ages by the Herring Revision of the Binet-Simon Tests, and (5) correspondence between the Intermediate and Higher Examinations themselves. The position of the normal curve in neither chart accords exactly with any of these data, but it constitutes in either case a sort of average of the various groups of data.

[1] Unless otherwise stated the score referred to is the 30-minute time-limit score.

The aim has been to establish scores which are normal for unselected age groups, not merely for public school pupils. The scores of high school students, therefore, tend to average somewhat higher than the norms.

True mental age. Originally the term "mental age" referred to the degree of mental ability which is normal for a given age. Thus, "having a mental age of 15 years" meant "having a degree of mental ability just normal for the age of 15 years." This degree of mental ability is measured by a score of 36 in the Higher Examination. Having a mental age of 17, according to this definition, meant making a score just normal for 17-year-olds, which is a score of 41. Mental ages so found may be called true mental ages. Since the score of 42 is the norm for adults (taken to mean any person of 18 years or over), there is no age for which a score above 42 is the norm; therefore, of course, no score above 42 can be expressed as a true mental age.

The term "Mental Age" (capitalized), however, has now come to have a special meaning and to denote measures of mental ability — i.e., scores — in the Binet-Simon Tests. Binet Mental Ages below about 13 years are true mental ages. Above that, especially above 16 years, they are merely scores. They are called Mental Ages merely for the sake of consistency. The Binet Mental Age of 17, for example, represents a degree of mental ability considerably above that which is normal for the age of 17 or, indeed, for any age.

The Binet Mental Age of 16 years is generally taken as the norm for adults in figuring IQ's. There is a growing opinion among psychologists, however, that the Binet Mental Age which is the norm for adults is appreciably lower than 16 years.[1] The correlations between the Binet Scale and the Higher Examination confirm this belief. The correspondence between Binet Mental Ages and Scores in the Higher Examination, as indicated in the Interpretation Chart, is based partly upon the correlation between the Higher Examination and the Herring Revision of the Binet-Simon Tests and partly upon the age norms. At any rate, Binet Mental Ages appear to express degrees of mental ability in excess of that normal for the corresponding chronological ages even below the age of 15 years. For this reason IQ's obtained by the method provided herein [2] may be slightly higher than those obtained by the Binet Scale for the older students, but it is believed that they more nearly correspond with what the Binet IQ's of these students were when they were younger.[3]

Measures of mental ability. Each of the six scales at the left side of the Interpretation Chart for the Higher Examination is a measure of mental ability. The scales are so placed that values having the same height are corresponding measures of mental ability as far as may be determined. Thus a score of 40 points in the Higher Examination with a 30-minute time limit is the equivalent of a score of 31 in the Higher Examination with a 20-minute time limit, a score of 57 in the Intermediate Examination, a score of 120 in the Advanced Examination, a Binet Mental Age of 15 years 0 months, and a T-score of 62.[4]

[1] See Lewis M. Terman, "Mental Growth and the IQ," *Journal of Educational Psychology*, September, 1921.
[2] See "Measures of brightness" below.
[3] See "Validity of Mental Age equivalents" below.
[4] For the meaning and significance of a T-score, see William A. McCall, "A Uniform Method of Scale Construction," *Teachers College Record*, January, 1921.

Any individual whose score is plotted above the normal curve may be considered as brighter than normal, and any individual whose score is plotted below the normal curve may be considered as duller than normal.[1] The distance at any point above or below the normal curve is a measure of the brightness of the individual. A 14-year student making a score of 35 in the Higher Examination has a lesser degree of mental ability but a greater degree of brightness than a 15-year student making a score of 37.

Measures of brightness. Brightness is generally measured in terms of the Intelligence Quotient (IQ), which is customarily found by dividing the individual's Binet Mental Age by his chronological age (decimal point dropped). In the case of mental-ability tests other than the Binet Tests it is customary to give Binet Mental Age equivalents of scores in order that these may be used in finding IQ's. It has been found, however, that IQ's so derived have an appreciably wider range than those obtained by means of the Binet Tests and are therefore not comparable with the latter. Now the IQ was invented for use with the Binet Tests and should retain its original significance, or else it will become relatively meaningless. It seems that the term " Intelligence Quotient " is coming to have a legal recognition, but IQ's as sometimes derived from group tests of mental ability bear little relation to IQ's derived by the Binet Tests. It is the purpose of the author to use the term " IQ " only in its original significance.

Unless it is distinctly understood how IQ's were derived in any case, however, they should be designated by some means such as National IQ's, Otis IQ's, or Binet IQ's. The term " IQ," when not so qualified or understood, must be interpreted as referring to actual Intelligence Quotients found by means of the Binet Tests.

Validity of Mental Age equivalents. It follows from the above statements regarding the greater range of IQ's for each age group when obtained by group tests than when obtained by the Binet Tests, that Binet Mental Age equivalents are actual equivalents *for normal children only*. Thus a score of 38 in the Intermediate Examination corresponds to a Binet Mental Age of 12 years when made by a child of approximately 12 years. But if made by a 10-year child, for example, it represents a Binet Mental Age of only 11½ years, since according to the chart a 10-year child making a score of 38 has an IQ of only 115. This lack of constant correspondence between scores and Binet Mental Ages is inherent in all group tests and is due to the lesser accuracy of group tests. This phenomenon seems not to be generally appreciated, as witnessed by the now prevalent custom of converting scores into Binet Mental Age equivalents. There is no Binet Mental Age equivalent of a score in any group test of mental ability which is valid for all ages of individuals. For that reason it is believed that the most scientific method of obtaining IQ's from scores in group tests, which are comparable with Binet IQ's, is by comparison of the variabilities of scores of individuals of the various age groups in the group test and in Binet Tests, as described below.

Mental Age equivalents as such are not necessary to the use of the Higher or Intermediate Examinations. Scores are quite sufficient as measures of mental ability and IQ's as measures of brightness. IQ's can be obtained from scores in the Otis Self-Administering Tests without Mental Age equivalents.

In order to compare scores with Mental Age equivalents of scores in other group tests or to find IQ's comparable with those obtained from other group tests, however, Binet Mental Age equivalents are given to scores in both examinations. These may be obtained from the Interpretation Chart for the Higher Examination. Binet Mental Age equivalents of scores in the Intermediate and Higher Examinations are given also in Tables 2*a* and 2*b*.

TABLE 2*a*

BINET MENTAL AGE EQUIVALENTS OF SCORES IN THE INTERMEDIATE EXAMINATION

SCORE	MA	SCORE	MA	SCORE	MA	SCORE	MA	SCORE	MA
1	7- 4	16	9- 0	31	11- 0	46	13- 1	61	15-11
2	7- 5	17	9- 2	32	11- 2	47	13- 3	62	16- 1
3	7- 6	18	9- 3	33	11- 3	48	13- 5	63	16- 3
4	7- 7	19	9- 5	34	11- 5	49	13- 7	64	16- 6
5	7- 8	20	9- 7	35	11- 6	50	13-10	65	16- 8
6	7- 9	21	9- 8	36	11- 8	51	14- 0	66	16-11
7	7-10	22	9-10	37	11-10	52	14- 2	67	17- 2
8	7-11	23	10- 0	38	12- 0	53	14- 4	68	17- 5
9	8- 0	24	10- 1	39	12- 1	54	14- 6	69	17- 8
10	8- 2	25	10- 3	40	12- 2	55	14- 8	70	17-10
11	8- 4	26	10- 4	41	12- 4	56	14-10	71	18- 0
12	8- 5	27	10- 6	42	12- 6	57	15- 0	72	18- 3
13	8- 7	28	10- 7	43	12- 8	58	15- 2	73	18- 5
14	8- 9	29	10- 9	44	12-10	59	15- 5	74	18- 7
15	8-11	30	10-10	45	12-11	60	15- 8	75	18- 9

TABLE 2*b*

BINET MENTAL AGE EQUIVALENTS OF SCORES IN THE HIGHER EXAMINATION

SCORE	MA	SCORE	MA	SCORE	MA	SCORE	MA	SCORE	MA
1	7-10	16	10- 8	31	13- 5	46	16- 0	61	17-11
2	8- 0	17	10-10	32	13- 7	47	16- 2	62	18- 0
3	8- 2	18	11- 0	33	13-10	48	16- 3	63	18- 2
4	8- 4	19	11- 3	34	14- 0	49	16- 5	64	18- 3
5	8- 6	20	11- 5	35	14- 2	50	16- 6	65	18- 5
6	8- 9	21	11- 7	36	14- 4	51	16- 8	66	18- 6
7	8-11	22	11-10	37	14- 6	52	16- 9	67	18- 8
8	9- 2	23	12- 0	38	14- 8	53	16-10	68	18- 9
9	9- 4	24	12- 2	39	14-10	54	17- 0	69	18-11
10	9- 7	25	12- 4	40	15- 0	55	17- 2	70	19- 0
11	9- 9	26	12- 6	41	15- 2	56	17- 3	71	19- 2
12	10- 0	27	12- 8	42	15- 4	57	17- 5	72	19- 3
13	10- 2	28	12-10	43	15- 6	58	17- 6	73	19- 4
14	10- 4	29	13- 0	44	15- 8	59	17- 8	74	19- 5
15	10- 6	30	13- 3	45	15-10	60	17- 9	75	19- 6

Age norms. The norms in the Intermediate or Higher Examination for the various ages may be read from the appropriate Interpretation Chart by noting the points at which the normal curve cuts the vertical age lines, or may be taken from Table 3 or Table 4.

[1] Here "normal" means exactly median in brightness. The term "normal," however, is often used to refer to all individuals whose scores are reasonably close to the norms for their respective ages.

1. (4)
2. (2)
3. (3)
4. (2)
5. (2)
6. (3)
7. (3)
8. (3)
9. (3)
10. (H)
11. (1)
12. (W)
13. (8)
14. (4)
15. (1)
16. (5)
17. (40)
18. (3)
19. (4)
20. (5)
21. (7)
22. (5)
23. (5)
24. (4)
25. (3)
26. (4)

TABLE 3

AGE NORMS IN INTERMEDIATE EXAMINATION (30-MINUTE TIME LIMIT)

YEARS		8	9	10	11	12	13	14	15	16	17	18 or over
	0	7	15	23	31	38	44	49	53	56	58	59
	1	8	16	24	32	39	44	49	53	56	58	
	2	8	16	24	32	39	45	50	53	56	58	
	3	9	17	25	33	40	45	50	54	57	58	
	4	10	18	26	34	40	46	50	54	57	58	
MONTHS	5	10	18	26	34	41	46	51	54	57	58	
	6	11	19	27	35	41	46	51	55	57	59	
	7	12	20	28	35	42	47	51	55	57	59	
	8	12	20	28	36	42	47	52	55	58	59	
	9	13	21	29	36	43	48	52	55	58	59	
	10	14	22	30	37	43	48	52	56	58	59	
	11	14	22	30	37	43	49	53	56	58	59	

TABLE 4

AGE NORMS IN HIGHER EXAMINATION (30-MINUTE TIME LIMIT)

YEARS		12	13	14	15	16	17	18 or over
	0	23	28	32	36	39	41	42
	1	24	28	32	36	39	41	
	2	24	29	33	37	39	41	
	3	25	29	33	37	40	41	
	4	25	29	33	37	40	41	
MONTHS	5	25	30	34	37	40	41	
	6	26	30	34	38	40	42	
	7	26	30	34	38	40	42	
	8	27	31	35	38	40	42	
	9	27	31	35	38	41	42	
	10	27	31	35	39	41	42	
	11	28	32	36	39	41	42	

Norms for college students. The scores of 2516 college students in the Higher Examination have been reported to date from 21 colleges and universities. Ten of the 21 used 20-minute time limits. Reducing all the scores to a 30-minute basis, the median score of these 2516 students is 53 points. The median scores of the 21 colleges and universities were as follows (30-minute time limit): 37, 39, 45, 46, 51, 51, 52, 53, 53, 54, 55, 55, 56, 56, 57, 59, 61, 62, 62, 64, and 65.

Various percentile scores of the 2516 college students are shown in Table 5.

TABLE 5

SHOWING VARIOUS PERCENTILE SCORES OF 2516 COLLEGE STUDENTS IN THE HIGHER EXAMINATION

	(Lowest)				(Median)				(Highest)
Percentile	0	3	10	25	50	75	90	97	100
20-MINUTE BASIS	16	25	30	36	41	49	55	61	75
30-MINUTE BASIS	20	32	39	46	53	62	67	71	75

Derivation of IQ Scale. According to Dr. Terman,[1] IQ's found by the Stanford Revision of the Binet-Simon Tests are distributed very closely in accordance with the law of normal distribution and with the middle 50 per cent falling within the range of IQ's from 92 to 108.

Due partly, no doubt, to the form of the Intermediate and the Higher Examinations, the steps in difficulty between items being smaller in the first part of each examination than in the last part, the distributions of scores of the several age groups have approximately the same variability, as far as can be determined. These distributions tend to be approximately normal, and are such that the middle 50 per cent of scores of each age group tend to fall within 8 points above and below the norm for that age. Fortunately, therefore, each point in the score of an individual above or below the norm for his age represents a point in IQ above or below 100. If an individual's score exceeds the norm for his age by 12 points, his IQ is 112.

How to find the IQ of an individual. The IQ of an individual may be found in either of two ways. One is as follows: Add to 100 the number of points by which a pupil's score exceeds the norm for his age, or subtract from 100 the number of points by which a pupil's score falls below the norm for his age. A simple and easy way to obtain the same result is to add 100 to the score of the individual and subtract from this sum the score which is the norm for his age. (The norm for individuals over 18 years may be taken as 42 points in the Higher Examination and as 59 points in the Intermediate Examination.) Thus, if a 15-year student's score in the Higher Examination is 34, the norm for his age being 36, his IQ is $34 + 100 - 36 = 98$.

A second method of finding an IQ is to plot the score of the individual in the appropriate Interpretation Chart by placing a dot on the horizontal line representing his score and on the vertical line representing his age. If the dot falls on a curve, the IQ of the individual will be stated at the end of the curve in the IQ column at the right. Thus, if a student of 15 years, 4 months, makes a score of 31 in the Higher Examination, his IQ is 94. If the point falls between two curves, the IQ may be estimated closely enough by noting its position relative to the curve above or below.

The IQ of each student may be entered after his name on the Class Record, in the column headed "IQ."

Index of Brightness. A measure of brightness used in connection with the Otis Group Intelligence Scale is the Index of Brightness. The relation between IQ's obtained by the Higher Examination and the Index of Brightness as found by the Advanced Examination is shown in the IQ and IB columns in the Interpretation Chart. This same correspondence holds good for IQ's obtained by the Intermediate Examination. If IQ's are used, it is not necessary to find IB's. Both IQ's and IB's serve the same purpose.

Percentile Rank. Another measure of brightness is called the "Percentile Rank." If a student exceeds 75 per cent of unselected individuals of his own age in score, he is said to have a Percentile Rank (PR) of 75, and the same for any other per cent. The scale of Percentile Ranks extends, therefore, from 0 to 100. A PR of 50 represents exact normality and corresponds to an IQ or IB of 100.

[1] L. M. Terman, *Measurement of Intelligence* (Houghton Mifflin Company, Boston), page 79.

KEY
Higher Form A
Page 4

Assuming distributions of scores for the various age groups to be in accord with the law of normal distribution, the Percentile Rank of an individual may be found from his IQ or IB by reference to the PR column at the right of the Interpretation Chart for the Higher Examination. This correspondence holds also between IQ's, IB's, and PR's for the Intermediate Examination. If desired, the student's PR may be entered also on the Class Record. This is optional.

Grade status. Table 6 shows the grade status corresponding to various 30-minute scores in the Intermediate and Higher Examinations. For example, a score of 11 in the Intermediate Examination is a grade status of 3.5 — that is, it is the norm for the end of the fifth month of the third grade; a score of 30 in the Higher Examination is the norm for the beginning of the eighth grade. These values are based on the tables of norms and Table 31 of *Statistical Method in Educational Measurement* (World Book Company).

Tables 7, 8, and 9 show the distributions of scores in the Intermediate and the Higher Examinations. Similar data have been compiled for the other grades but cannot be given for lack of space.

TABLE 6

Intermediate Examination						Higher Exam.	
Score	Grade Status	Score	Grade Status	Score	Grade Status	Score	Grade Status
11	3.5	26	5.0	41	7.0	30	8.0
12	3.6	27	5.1	42	7.2	31	8.2
13	3.7	28	5.2	43	7.3	32	8.5
14	3.8	29	5.3	44	7.5	33	8.7
15	3.9	30	5.5	45	7.6	34	9.0
16	4.0	31	5.6	46	7.8	35	9.4
17	4.1	32	5.7	47	7.9	36	9.8
18	4.2	33	5.8	48	8.1	37	10.0
19	4.3	34	6.0	49	8.3	38	10.4
20	4.4	35	6.1	50	8.5	39	10.8
21	4.5	36	6.3	51	8.7	40	11.0
22	4.6	37	6.4	52	9.0	41	11.6
23	4.7	38	6.6	53	9.2	42	12.0
24	4.8	39	6.7	54	9.5	43	12.6
25	4.9	40	6.9	55	9.8		

TABLE 7

Showing Distribution of Scores of 24,724 Pupils in the 6th Grade in the Intermediate Examination

Score	Age								Totals
	9 to 9–11	10 to 10–11	11 to 11–11	12 to 12–11	13 to 13–11	14 to 14–11	15 to 15–11	16 or over	
75			1						1
70–74		3	19	8					30
65–69		31	116	49	10	6			212
60–64	1	66	344	193	28	2	3		637
55–59	3	97	551	336	87	24	5	1	1104
50–54	3	142	912	586	197	79	21		1940
45–49	7	183	1130	1084	340	138	34	7	2923
40–44	6	162	1193	1061	491	208	50	11	3182
35–39	6	207	1221	1241	668	280	106	11	3740
30–34	9	155	1003	1180	761	338	150	24	3620
25–29	7	115	784	935	700	360	171	27	3099
20–24		83	457	612	556	328	179	8	2223
15–19	1	34	241	341	353	220	117	26	1333
10–14	1	7	75	134	150	89	58	14	528
5–9		2	11	27	25	31	23	6	125
0–4			6	7	4	4	4	2	27
Totals	44	1287	8064	7794	4370	2107	921	137	24724

Median age: 12 yr. 5 mo. Median score: 41.

TABLE 8

Showing Distribution of Scores of 35,278 Pupils in the 8th Grade in the Intermediate Examination

Score	Age								Totals
	11 to 11–11	12 to 12–11	13 to 13–11	14 to 14–11	15 to 15–11	16 to 16–11	17 to 17–11	18 or over	
75		1	3	6	1				11
70–74	14	96	303	182	48	9			652
65–69	28	324	1177	740	213	50	4		2536
60–64	53	227	1710	1327	432	93	10		3852
55–59	39	426	1828	1753	732	168	16	2	4964
50–54	44	441	1771	1933	1025	219	42	2	5477
45–49	22	313	1468	1822	1102	295	54	2	5088
40–44	28	253	1187	1567	1052	313	38	6	4444
35–39	26	197	790	1122	849	268	50	10	3312
30–34	16	139	513	820	605	237	28	6	2364
25–29	9	76	244	393	423	160	28	2	1335
20–24	9	38	146	242	221	106	28	10	800
15–19	1	17	60	102	63	50	4		297
10–14		7	12	33	28	13	4		97
5–9	2	1	10	5	7	4			29
0–4			2	6	9	3			20
Totals	301	2556	11224	12053	6810	1988	306	40	35278

Median age: 14 yr. 3 mo. Median score: 49.

TABLE 9

Showing Distribution of Scores of 15,715 Pupils in the 12th Grade in the Higher Examination

Score	Age							Totals
	14 to 14–11	15 to 15–11	16 to 16–11	17 to 17–11	18 to 18–11	19 to 19–11	20 or over	
75	1		1					2
70–74		5	19	11	5	2	1	43
65–69	2	31	78	128	43	10	4	296
60–64	4	40	283	312	123	31	11	804
55–59	3	75	465	454	227	62	23	1309
50–54	10	125	628	970	484	147	52	2416
45–49	7	96	770	1247	462	219	76	2877
40–44	4	78	532	1280	750	227	92	2963
35–39		40	415	960	686	268	101	2470
30–34	1	28	211	495	455	172	66	1428
25–29		10	85	213	216	112	43	679
20–24		1	27	85	97	60	17	287
15–19		5	11	31	27	18	5	97
10–14			4	10	5	3	5	27
5–9				5	4	4		13
0–4				1	1	2		4
Totals	32	394	3529	6202	3585	1337	496	15715

Median age: 17 yr. 7 mo. Median score: 44.

KEY
Higher Form A
Page 2

1. (3
2. (30
3. (4
4. (2
5. (1
6. (2
7. (14
8. (4
9. (3
10. (2
11. (5
12. (6
13. (3
14. (1
15. (240)
16. (4
17. (1
18. (4
19. (5
20. (4
21. (8
22. (2
23. (2
24. (5
25. (2
26. (2

Application of Results

Purposes of mental-ability tests. The chief administrative purposes for which mental-ability tests are given are: (1) the division of the pupils of a grade or the students of a class into more homogeneous divisions, usually in order that instruction of different degrees of enrichment may be given, (2) the regrading of pupils so that the pupils of each grade are more homogeneous in mental ability and are therefore more easily taught together, (3) the division of pupils of a school into groups which will progress at different rates.

The reader should consult *Intelligence Tests and School Reorganization*, by L. M. Terman and others (World Book Company), for a detailed discussion of the purposes and uses of tests of mental ability in regrading and classifying.

Division of classes. If it is desired to divide the students of a class into more homogeneous groups for instruction purposes, this may be done either on the basis of score or on the basis of IQ. Division on the basis of score would be made as follows:

Classification according to score. Find the distribution of the scores of the class. If the scores are plotted on the Interpretation Chart, this may be done by placing in the column under "Totals" at the left the number of dots on each horizontal line. (If desired, the frequencies of the various class intervals, 0–4, 5–9, etc., may be entered in the same column. These will be used in drawing a percentile curve on the Percentile Graph.) By means of this distribution the class may be divided into any number of divisions for differentiated instruction. Thus, let us suppose it is desired to divide a class into three divisions, A, B, and C, on the basis of score. This would be done as follows: Count down the distribution until one third the total number of scores has been counted. At this point draw a line across the distribution to mark the lower limit of score of Group A. Next count down another third and draw another line marking off Group B from Group C. Referring now to the Class Record, where each student's score appears opposite his name, the division designation, A, B, or C, may be placed opposite each student's name in the column headed "Classification."

This method is illustrated in the sample Interpretation Chart in Figure 2. Here 105 9th-year students are divided into three classes of 35 students each on the basis of score.

Classification according to brightness. If it is desired to divide the students of a class into divisions on the basis of brightness, this may be done by dividing the distribution of IQ's in the same way as suggested above for dividing the distribution of scores. To find the distribution of IQ's, count the dots between each two adjacent curves, including those which touch the lower but not the upper curve. Place the number of dots in the column headed "Totals" at the right, as shown in the sample charts. As a check on accuracy in counting the dots, it will be well to add these numbers and see that the sum corresponds to the number of students in the class.

Considerations governing method of classification. Two methods of classification have been described. Which should be used? It will be found that the dispersion of scores of any age group is so great in comparison with the rather narrow range of age norms for high school ages, that the resulting classifications by the two methods are very nearly the same. Even when classified by IQ, the superior division consists of students whose scores are nearly all higher than those of the next division, etc. It remains for further research to discover which is the better method. It is possible that if the classification is made for the purpose of determining groups which will cover the curriculum of the high school in different amounts of time, classification on the basis of IQ may be the better method, whereas if it is to establish sections which will take work of differing degrees of intensity, classification on the basis of score may be the better.

Regrading. If it is felt that the pupils of a school are very badly graded, so that the 6th grade, for example, is believed to contain some pupils who could do satisfactory work in the 7th or 8th grade and some who should be in the 5th grade to do the best work, the pupils may be regraded on the basis of score in a mental-ability test. The ideal grading would be that in which the pupils of the 6th grade all make scores higher than those in the 5th grade and lower than those in the 7th grade, etc. Practically this is impossible.

The next best procedure is to select those pupils from the 6th grade who make very high or very low scores and to promote or demote these. No hard and fast rule can be laid down for this. The number of pupils to be shifted depends partly on the amount of overlapping of ability between grades and partly on the character of the instruction possible in the school. Where relatively individual instruction is possible, homogeneous grouping is not so essential. It is probably best to begin regrouping slowly, taking first those whose scores deviate most from the median score of the grade and whose scholarship in the judgment of the teacher accords with their scores, and promoting or demoting these pupils one grade or one-half grade. If conditions warrant or seem to require it, they may be further promoted or demoted later. Later, also, more pupils may be regraded, until by degrees the grades will become more nearly homogeneous.

Multiple-track plan. A plan of school organization called the "multiple-track plan," in use in Oakland, California, and elsewhere, is one in which the pupils of the school are divided into groups (generally three, sometimes five) which progress at different rates. Thus there may be fast-moving, normal, and slow-moving classes, covering the first eight grades in say 7, 8, and 9 years, respectively.

A situation illustrating the need of reclassification is that shown in the sample Interpretation Chart in Figure 1. In this chart are plotted the scores of 276 pupils in Grades 5 to 8 of a grammar school. The scores of the different grades are plotted by different marks. It will be seen that the different grades overlap very markedly. Each grade contains both young pupils making high scores, who are therefore very bright, and old pupils making low scores, who are therefore very dull.

Division of pupils into groups to progress at different rates should be made on the basis of brightness. It is recommended by Terman that the brightest 15 per cent of the pupils of a school be placed in fast-moving classes (where numbers permit) and the dullest 15 per cent in slow-moving classes. The selection of these pupils should be made, therefore, on the basis of IQ (or IB or PR). A convenient method of making the division is illustrated in Figure 1 in the case of the 276 pupils. Of this number 15 per cent is about 40. Therefore the brightest 40 (according to IQ) should be placed in the fast-moving group and the dullest 40 in the slow-moving group.

The method of making the division by means of the chart

• o × △ INTERPRETATION CHART. For Intermediate Examination

Grades plotted. 5th, 6th, 7th and 8th ...Number...276...Form used...A.....Time limit..30.....min. Date...Oct. 1.....1922

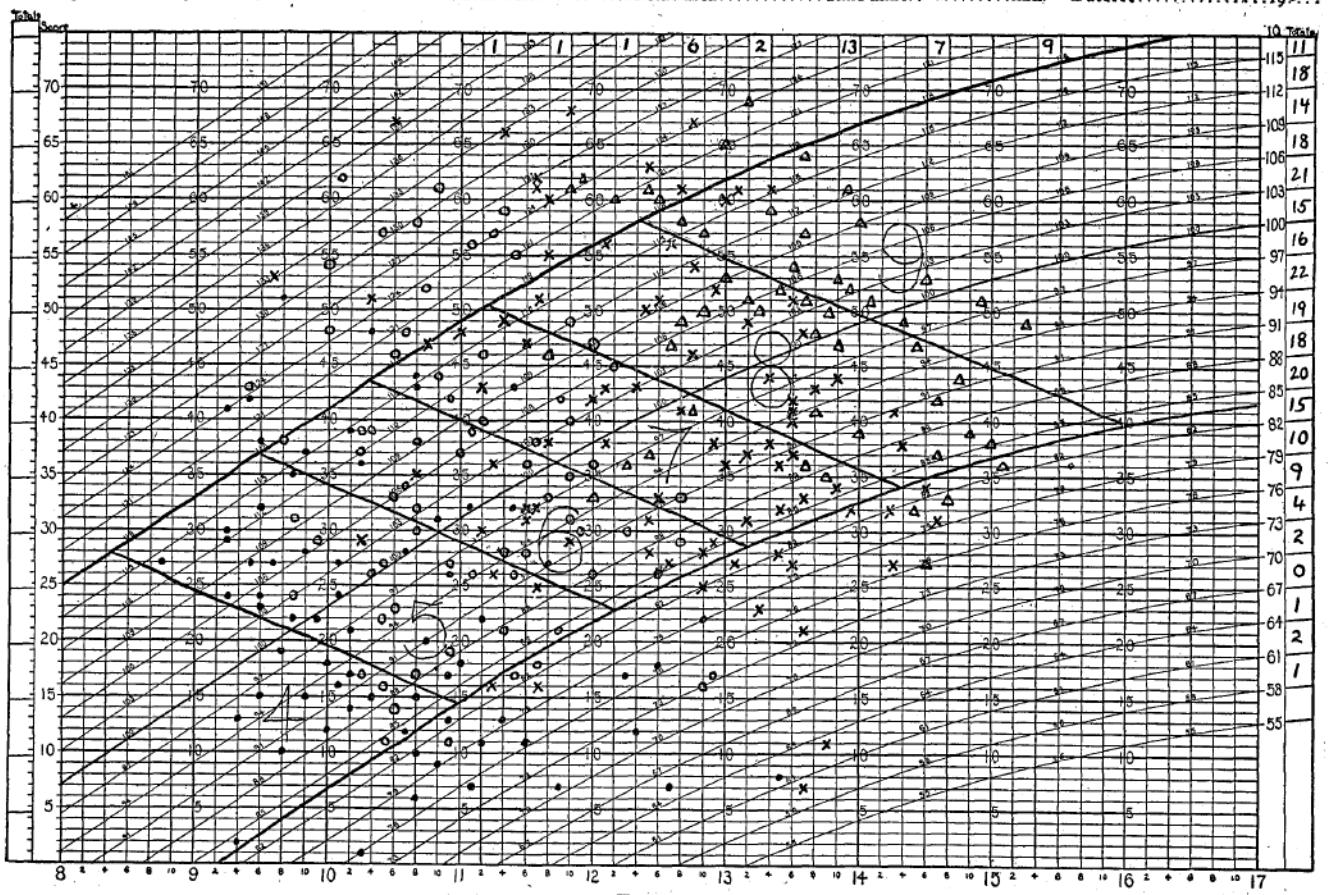

FIG. 1

INTERPRETATION CHART. For Higher Examination

Classes plotted...Ninth Year.....Number 105 Form used..A....Time limit..30...min. Date....Oct. 1.....1922

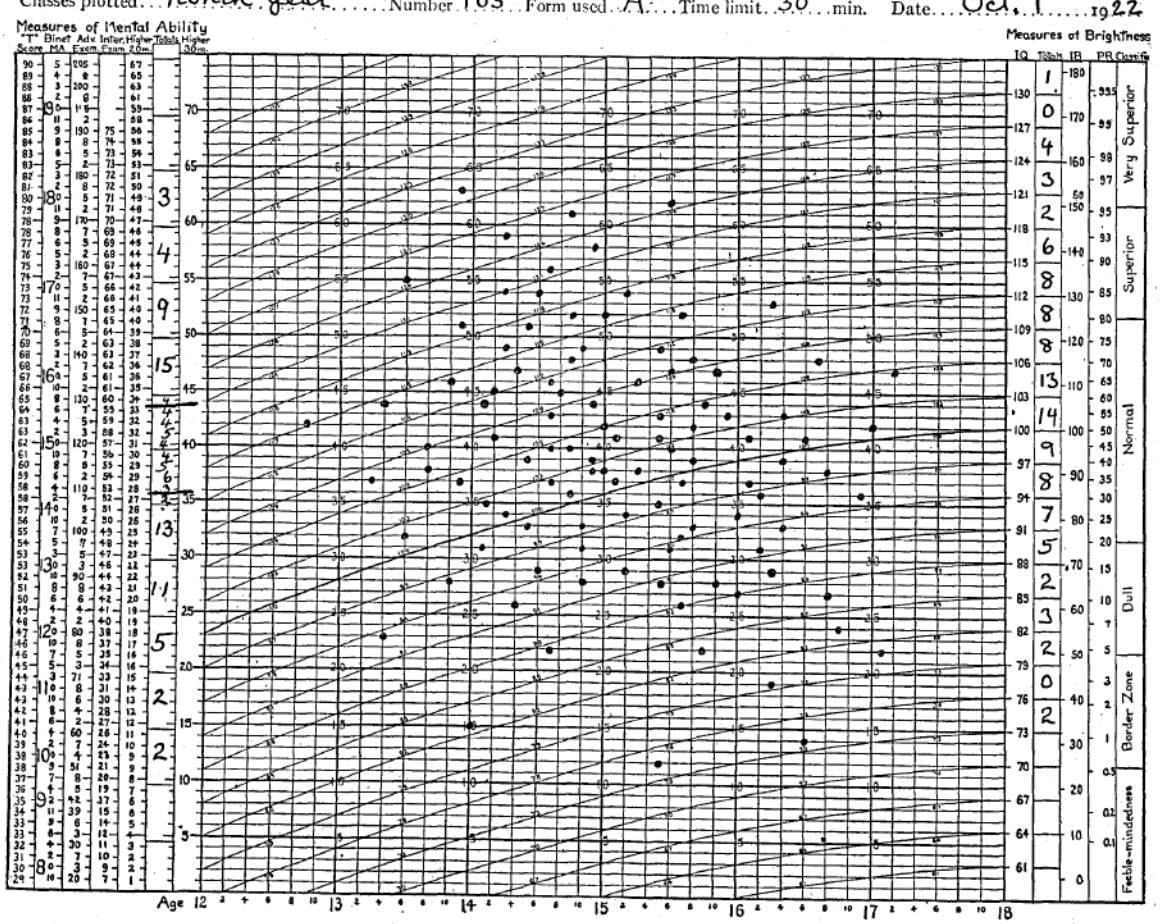

FIG. 2

KEY

Higher Form B

Page 2

1. (3)
2. (20)
3. (3)
4. (G)
5. (T)
6. (2)
7. (2)
8. (2)
9. (450)
10. (4)
11. (4)
12. (6)
13. (5)
14. (3)
15. (3)
16. (4)
17. (3)
18. (8)
19. (3)
20. (17)
21. (4)
22. (1)
23. (2)
24. (2)
25. (5)

is as follows: Find the curve which separates the upper 40 cases according to IQ. If no curve cuts off approximately 40 cases, draw a curve which does, making it parallel to the printed curves. The pupils whose scores are plotted above this curve should be placed in the fast-moving class. Similarly find or draw a curve which separates the lower 40 cases according to IQ. The pupils whose scores are plotted below this curve should be placed in the slow-moving group.

Grading within the group. The pupils of the three groups, fast-moving, normal, and slow-moving, are still to be graded. Ideally this would be done on the basis of score. Thus, if the 196 pupils in the normal group are to be placed in Grades 5, 6, 7, and 8, the lowest fourth or 49, according to score, would be placed in the 5th grade, the next 49, according to score, would be placed in the 6th grade, etc.

This would result, however, in placing in one grade pupils who, although very homogeneous as to score, had a very wide range of ages. The pupils of the 6th grade, for example, according to this plan, might range in age from a little over 9 years to nearly 16 years. Practically, therefore, it may seem more desirable to take some account of the age of the child. A very simple way to do this is by drawing lines across the middle band of the chart at a slight slant instead of horizontally, as shown in Figure 1; in this way age is automatically taken account of. The pupils represented by the dots in each area so marked out, while somewhat less homogeneous as to score, are much more homogeneous as to age. The greater the slant, the more weight is given to age.

In the sample chart provision is made for skipping certain pupils into the 9th grade, demoting others into the 4th grade, and dividing the remaining pupils into four groups of 40 each which would be placed in the 5th, 6th, 7th, and 8th grades.

If the slanting-line method is used, the dots plotted in the Interpretation Chart must be identified, or else it will be necessary to plot the score of each pupil again to determine in what grade he should be. It has been found feasible to do this by numbering the pupils consecutively on the Class Record and writing each pupil's number in small figures near the dot representing his score. If this is done, the pupils whose scores fall within a given area may be identified at once.

The number of cases represented in the sample chart is too small to illustrate the division of the fast- and slow-moving groups into grades — and, indeed, in a school of this size the establishment of fast- and slow-moving classes would doubtless entail grave administrative difficulties; but in a school where there are many more pupils, this would be done in exactly the same way as shown in the case of the normal group.

It must be remembered that the classification which would be effected by any of the above methods is rather in the nature of a goal to be worked toward gradually. It is doubtful whether it would ever be wise to reorganize a school completely on any of these plans at one time, especially on the basis of one test. It would be better, doubtless, to promote or demote extreme cases, as explained above, and as these show themselves to be properly placed others may be shifted. The teachers' independent judgments should weigh equally with the test results in determining which pupils should be regraded or in what grade any individual pupil should be placed. Indeed, the regrading should be done according to the judgment of the teachers *in the light of the test results.*

Educational and vocational guidance. In advising a young high school student regarding his educational future or his vocation, his degree of brightness should be considered. It seems probable that an entering student with a PR of 90 or higher may safely be permitted to attempt to finish high school in $3\frac{1}{2}$ or even 3 years. A student with a PR of 50 or less should certainly be prevented from attempting more than the regular course. Any one interested in research will do well to investigate the degree of brightness necessary to complete successfully the high school in $3\frac{1}{2}$ or 3 years.

A boy or girl having a PR of 75 or over may be safely encouraged to go to college. Doubtless many whose PR's are between 50 and 75 will succeed in college if industrious. A boy or girl whose PR is less than 25 probably should be dissuaded from going to college. Here again there is need of research.

Similarly the degree of brightness of a student should be considered in advising him regarding a vocation. Bright students should be encouraged to enter the professions. Dull ones should be helped to choose a trade. The Stenquist Mechanical Aptitude Tests[1] may help to discover the proper trend of a boy's education.

Classification Test. If it is desired to give a general achievement test in any grade from the fourth to the ninth in addition to the Intermediate Examination, it is recommended that the Classification Test[1] be used. The Classification Test is a combination of the Intermediate Examination and a general achievement test covering reading, arithmetic, spelling, grammar and diction, geography, history and civics, literature, vocabulary, physiology and hygiene, and general information, including music and art. Form A of the Classification Test contains Form A of the Intermediate Examination, and Form B of the Classification Test contains Form B of the Intermediate Examination. The time limit on each of the two parts is one-half hour. The correlation of the Classification Test and the Stanford Achievement Test was found by Dr. E. E. Keener to be .83.

The Percentile Graph

In order to compare the score of any pupil with the scores of the class as a whole or to compare two or more classes, the most effective way is to draw a percentile curve for each grade or class on the Percentile Graph, a copy of which is included in each package of Examinations.

Definition of percentile curve. A percentile curve is a smooth line having a horizontal length representing 100 per cent of the scores of any group of individuals and so drawn that any point on the curve has a height representing the amount of a given score and a horizontal position on the graph representing the per cent of the scores of the group that is exceeded by the given score. The method of drawing a percentile curve is given in full below. One not familiar with percentile curves will appreciate their significance after studying the directions for drawing them.

A percentile curve shows at a glance not only the median score of a class but also the range and variability of the scores. It shows at a glance just what per cent of the scores of the class is exceeded by the score of any given individual and just what per cent of the class attains or exceeds any given score. Two or

[1] Published by World Book Company, Yonkers-on-Hudson, New York.

more curves on the same graph show very vividly the amount of overlapping of the scores of different classes.

Directions for Drawing a Percentile Curve

General procedure. The steps taken in drawing the percentile curve are: (1) distributing the scores, (2) finding the subtotals — number of cases to and including those in each class interval, (3) reducing these subtotals to per cents of the number of cases in the group, (4) locating points in the graph representing these per cents, and (5) drawing a smooth curve through these points.

Provision is made for distributing the scores of two groups of individuals on one Percentile Graph sheet, and from these distributions two percentile curves may be drawn. This does not mean, however, that only two curves may be drawn on one graph. The scores of additional groups may be distributed on other Percentile Graph sheets or any sheet of paper and as many curves drawn on one graph as may be conveniently distinguished.

Distributing the scores. In one of the columns headed "Tallying," distribute the scores of a class by putting a short mark opposite the interval of score within which the score of each individual falls. The sample Percentile Graph (Fig. 3) shows that in the freshman class two individuals had scores between 60 and 64, two had scores between 55 and 59, five had scores between 50 and 54, etc. If the scores of a class have been plotted on an Interpretation Chart, the number of scores falling within each interval of score may be copied directly on to the Percentile Graph sheet in figures, as shown in the sample in the case of the sophomore class. This will save distributing the scores again. The number of tallies or the figure in the Tallying column which tells the number of scores falling within any given interval of scores is called a "frequency." The frequency of freshman scores between 45 and 49, for example, is 8.

Finding the subtotals. Begin at the bottom of the column of frequencies and place in the square to the right of each frequency the sum of the frequencies up to and including those in that group. In the "Subtotal" column, under "Freshman," there is 1 score in the first interval, a subtotal of 2 to and including the second interval, a subtotal of 4 to and including the third interval, etc., and 50 to and including the last interval. This last "subtotal" (50) should equal the number of students in the class, as entered at the top of the column.

Reducing subtotals to per cents. In the column headed "Per cents," write opposite each subtotal the per cent that subtotal is of the whole number of students in the class. In the sample, under Freshman, 1 is 2 per cent of 50, 2 is 4 per cent of 50, 4 is 9 per cent of 50, etc., and 50 is 100 per cent of 50.

It is not necessary to reduce subtotals to per cents when use is made of the Scale Chart printed on the back of the Percentile Graph. The manner of using the Scale Chart is given below.

Locating points in the graph. First place a dot at the left edge of the graph on the horizontal line representing the lower limit of the lowest class interval containing a score. Next, place on the next line above, a dot having a distance to the right of the left margin of the graph equal to the first number in the per cents column, according to the scale at the foot of the graph. (In the sample the second dot in the percentile curve for the freshmen is placed 2 units from the edge of the graph.) Next, place on the next line above, a dot having a distance to the right of the margin representing the next per cent, etc. (The third dot represents 4 per cent, etc., and the last dot represents 100 per cent.)

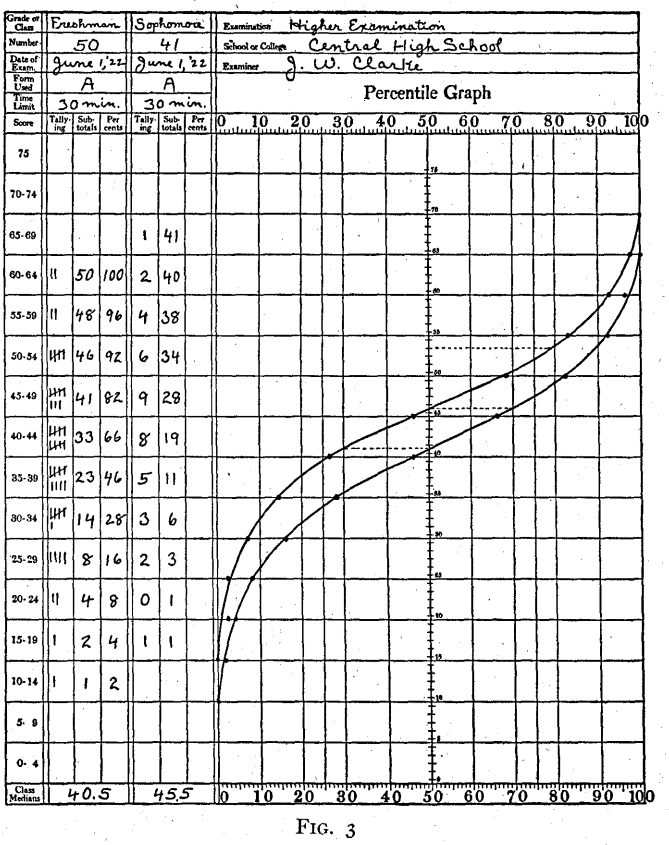

FIG. 3

Use of Scale Chart. The Scale Chart on the back of the Percentile Graph is provided to simplify the process of plotting the points in the graph. It is used as follows: Let us take the case of the freshman class, there being 50 students in the class. Find Scale 50 on the Scale Chart according to the numbers at the right. This line is divided into exactly 50 equal parts by the slanting lines in the chart. Each space, therefore, represents $\frac{1}{50}$ or 2 per cent of the width of the graph. The second dot in the freshman percentile curve is to be placed just $\frac{1}{50}$ of the distance to the right of the margin. This is just 1 space on Scale 50. The third dot is to be placed just 2 spaces to the right of the margin, the fourth point just 4 spaces to the right of the margin, etc., according to Scale 50 in the Scale Chart. By the use of Scale 41 the points have been plotted in the same way for the sophomore class.

By folding the Scale Chart on the proper scale and applying it to the Percentile Graph,[1] the width of the graph may be divided into any number of equal parts from 40 to 100. By letting 2 or 4 graduations represent 1 unit or letting 1 graduation represent 2 units, the width of the graph may be divided into any number of equal parts from 10 to 200.

Drawing the curve. Draw a smooth curve through the dots plotted as described above. This is the percentile curve.

Finding median score of class. The point where the percentile curve cuts the 50-percentile line represents the median

[1] If only one Percentile Graph is at hand, the proper distances may be transferred from the Scale Chart on the back by means of a strip of paper.

1. (3)
2. (15)
3. (4)
4. (2)
5. (3)
6. (1)
7. (14)
8. (2)
9. (5)
10. (2)
11. (3)
12. (5)
13. (2)
14. (2)
15. (240)
16. (4)
17. (3)
18. (1)
19. (3)
20. (2)
21. (6)
22. (2)
23. (4)
24. (3)
25. (4)
26. (2)

score of the group.[1] This may be read on the vertical scale along the 50-percentile line. The median scores of the freshman and sophomore classes in the sample are 40.5 and 45.5, respectively. These medians may be entered at the foot of the data columns as shown.

Finding variability of scores. The points at which the curve cuts the 25 and 75 percentile lines represent the lower and upper quartile scores of a distribution. The interval between these is the interquartile range — a very convenient measure of the scatter of the distributions. In the sample Percentile Graph the interquartile ranges for the two classes are about 14 points each (freshmen, 33.5 to 47, and sophomores, 39 to 53).

Overlapping of classes. It will be seen by a glance at the percentile curves that the sophomore class is only slightly better than the freshman class and that the distributions of scores of the two classes overlap very markedly. A convenient way to express this overlapping is to say that 30 per cent of the sophomore class fall below the median of the freshman class, or that 30 per cent of the freshman class exceed the median of the sophomore class.

Percentile rank in class. If an individual makes a score exceeding 25 per cent of the scores of his class, he is said to have a percentile rank of 25 in his class; and the same for other percentages. The percentile rank of any individual among the members of his class may be found from the percentile curve representing the scores of his class as follows: Suppose an individual in the sophomore class has made a score of 53. Find the point 53 on the vertical scale in the Percentile Graph and move the pencil horizontally to the point at the same height on the percentile curve. This point represents on the horizontal scale a percentile rank of 79. The percentile rank of the individual among the members of his class is, therefore, 79, which means that his score exceeds the scores of 79 per cent of his class. A score of 53 represents a Percentile Rank of 89 among the members of the freshman class.

In so far as mental ability, as measured by this examination, is an indication of the scholarship to be expected from a student, the percentile rank of a student in class may be taken as showing how he should stand in this regard to the class as a whole.

The meaning of "percentile rank in class" must be distinguished from that of "Percentile Rank," a measure of brightness, referring to the rank of an individual among a large unselected group of his own age.

Reliability and Validity

Reliability. By "reliability" is meant the degree to which the scores of the test are consistent in measuring whatever the test measures. Reliability is determined by means of correlation between different forms of the same test. The coefficients of correlation were found between Forms A and B of both examinations as follows:

Higher Examination, Grades 7 to 12:

Group I, Form A first, 128 cases, $r = .917 \pm .009$
Group II, Form B first, 125 cases, $r = .925 \pm .009$
} avg. .921

Intermediate Examination, Grades 4 to 9:

Group I, Form A first, 215 cases, $r = .953 \pm .006$
Group II, Form B first, 212 cases, $r = .943 \pm .007$
} avg. .948

[1] The value so found may not be exactly the same as the median found in the usual way by counting to the middle paper in order of score, but if not, the median score found by means of the curve is considered to represent the distribution better and to be in that sense more accurate.

The values of the probable error of a score determined from these groups were respectively 2.56 and 2.68 points for the Higher Examination and 2.85 and 2.78 for the Intermediate Examination. The probable error of a score in either examination, therefore, is slightly over $2\frac{1}{2}$ points. This means that the score in either examination will be correct within about $2\frac{1}{2}$ points in half the cases. As has been shown, this means also that the probable error of an IQ is about $2\frac{1}{2}$ points.

Validity. There is no direct method, of course, of finding the true validity of the tests — the degree to which they measure the hypothetical quality we call mental ability. The method of standardization is perhaps the best assurance as to the validity of the tests. Various other indications are available, however. The coefficient of correlation between the Higher Examination and the Advanced Examination taken two years earlier was .889 for 180 cases in Grades 7 to 12. The average of four coefficients of correlation between the Higher and Intermediate Examinations, averaging about 100 cases each in groups covering Grades 7 to 9, was .842. The correlation between scores in the Higher Examination and "scholarship" is reported by Clarence W. Proctor, Principal of High School, Bangor, Maine, as follows:

Grade 11, number of cases 240, $r = .55$
Grade 12, number of cases 204, $r = .57$

The correlation between scores in the Higher Examination and scholarship as reported by the teachers of 157 high school freshmen in Oakland, California, was .59.

The correspondence between scores in the Higher Examination and letter ratings used in connection with Alpha is shown in Table 10.

TABLE 10

ALPHA RATINGS	ALPHA SCORES	SCORES IN HIGHER EXAMINATION
A	135–212	58–75
B	105–134	49–57
C+ . . .	75–104	39–48
C	45–74	28–38
C− . . .	25–44	20–27
D	15–24	15–19
E	0–14	0–14

A high score. One student has been reported to have made a perfect score of 75 points in the Higher Examination in 20 minutes. This student is characterized by the professor of educational psychology of the college as follows:

"The person is a young man just past 21 years of age. He had very poor high school training due to the fact that the schools in his section of North Carolina are not what they should be. He is finishing college in $3\frac{1}{2}$ years with about 8 quarter-hours to spare. I have looked up his college record and find that he has grades of A's or B's. There are no C's, D's, or F's. He won the scholarship medal at college before he came to this institution. (He entered here as a senior.) He is a good mixer, and I do not believe that he puts in very many hours on his studies.

"The father is a rather successful farmer. In fact, from what I can gather, he is the best farmer in his neighborhood. An older brother is a professor in a college. I have had this young man in several classes. It is my firm conviction that he could finish the average college course in two years."

Test Service Bulletins. The reader is invited to send to the World Book Company for free copies of the Test Service Bulletins for further information about testing.

Bureau's Copy

EVERY PUPIL SCHOLARSHIP CONTEST

Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

REPORT SHEET

Name of School .....

Town ..... State .....

Name of Subject .....

Author of Text .....

Is this subject required? .....

Total number of pupils enrolled in subject .....

Record the scores and names of the three pupils having the highest scores

1st place, Score ..... Name .....

2nd place, Score ..... Name .....

3rd place, Score ..... Name .....

Record the names of the schools you are contesting with in this subject. If you are not contesting leave blank alone.

School ..... City ..... State .....

School ..... City ..... State .....

School ..... City ..... State .....

Important Statements.

1. The **"Report Sheets" must be sent** to the Bureau within **four days** after the test is given.
2. The Blue copy of the Scholarship Contest Report Sheet should be sent to the Bureau.
3. In case you are contesting with another school and desire the Bureau's OK send **Blue, White,** and **Pink** copies of Report Sheet.
4. If you have more than one section of a class, throw all the papers together.
5. Record the scores of your test papers in column "A" according to directions found on the back of the White Record Sheet and on "General Directions."

We certify that the test was given, the papers scored, re-scored, checked and rechecked according to directions. We furthermore certify that the above distribution of scores is an accurate statement of the results. We certify that (if we are contesting with another school in this subject and desire the Bureau's OK), we are enclosing an exact copy of this report for each school and a copy for the Bureau. We are enclosing the 3 best papers.

Bur.OK Stamp

Signatures:

Teacher of Subject .....

Supt. or Prin. .....

DATE .....

(Directions for Recording Scores and Determining the Median will be found on General Directions and on "White" Every Pupil Scholarship Contest Report Sheet.)

A

Score	No. of papers having each specific score
165 and above	
160—4	
155—9	
150—4	
145—9	
140—4	
135—9	
130—4	
125—9	
120—4	
115—9	
110—4	
105—9	
100—4	
95—9	
90—4	
85—9	
80—4	
75—9	
70—4	
65—9	
60—4	
55—9	
50—4	
45—9	
40—4	
35—9	
30—4	
25—9	
20—4	
15—9	
10—4	
5—9	
0—4	
Total No. of papers	
Median score	

Your Copy
Keep it unless you are contesting with another school.

EVERY PUPIL SCHOLARSHIP CONTEST

Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

REPORT SHEET

Name of School .....

Town ..... State .....

Name of Subject .....

Author of Text .....

Is this subject required? .....

Total number of pupils enrolled in subject .....

Fill These Blanks

Highest Score .....

Median Score .....

Lowest Score .....

Record the names of the schools you are contesting with in this subject. If you are not contesting leave blank alone.

School ..... City ..... State .....

School ..... City ..... State .....

School ..... City ..... State .....

Important Statements.

1. The **"Report Sheets" must be sent** to the Bureau within **four days** after the test is given.
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3. In case you are contesting with another school and desire the Bureau's OK send **Blue, White,** and **Pink** copies of Report Sheet.
4. If you have more than one section of a class, throw all the papers together.
5. Record the scores of your test papers in column "A" according to directions found on the back of the White Record Sheet and on "General Directions."

We certify that the test was given, the papers scored, rescored, checked and rechecked according to directions. We furthermore certify that the above distribution of scores is an accurate statement of the results. We certify that (if we are contesting with another school in this subject and desire the Bureau's OK), we are enclosing an exact copy of this report for each school and a copy for the Bureau.

Bur.OK Stamp

Signatures:

Teacher of Subject .....

Supt. or Prin. .....

DATE .....

(Over for Directions for Recording Scores and Determining the Median.)

A	
Score	No. of papers having each specific score
165 and above	
160—4	
155—9	
150—4	
145—9	
140—4	
135—9	
130—4	
125—9	
120—4	
115—9	
110—4	
105—9	
100—4	
95—9	
90—4	
85—9	
80—4	
75—9	
70—4	
65—9	
60—4	
55—9	
50—4	
45—9	
40—4	
35—9	
30—4	
25—9	
20—4	
15—9	
10—4	
5—9	
0—4	
Total No. of papers	
Median score	

METHOD OF DETERMINING MEDIAN

Classes will be ranked according to the median scores. Use the following method to determine the median score.

1. After all papers have been scored, rescored, checked, and rechecked, arrange the papers in a consecutive order according to the score—highest, next highest, etc.

2. If you have more than one section of a class throw all the papers together.

3. Count the total number of papers and record this as **total number of papers at bottom of column "A."**

4. Find the score on the middle paper when there is an odd number of papers; and the score halfway between the scores on the two middle papers when there is an even number of papers. This score will be the median score. Illustrations (x), (y), and (z) on this side of this sheet will make the above statement clear.

5. Place this determined median after median score at bottom of column "A."

6. Check and recheck your work. Know that you are right.

Illustrations

(x)		(y)		(z)	
	61		61		54
	54		55		53
	53		50		50
	50		48		50
9	50	9	47	8	49
	49		45		45
	48		45		42
	45		44		42
	43		43		* * * * *
	**42		* * * * *		40
	41		43		38
	40		42		37
	40		41	8	36
	40		40		35
9	39	9	39		32
	35		38		30
	34		30		29
	25		30		
	10		20		
Total 19		Total 18		Total 16	
Median 42		Median 43		Median 41	

METHOD OF RECORDING SCORES

For convenience of the Bureau, record the scores in column "A" of Report Sheet according to the following method:

1. See that all papers are arranged in a consecutive order according to score.

2. Record in column "A," opposite the corresponding groups (0-4, 5-9, 10-4, 15-9, 20-4, 25-9, 30-4, etc.) the number of papers having respectively scores between 0 and 4.9, 5 and 9.9, 10 and 14.9, 15 and 19.9, 20 and 24.9, 25 and 29.9, 30 and 34.9, etc.

3. Samples I and II illustrate how this is done. Sample I represents the scores of the papers arranged in consecutive order. Sample II represents a portion of column "A" of Report Sheet.

4. In Sample I all of the papers have been grouped according to No. 2, and the number of papers in each group counted. The number of papers in each group has been recorded opposite the corresponding group in Sample II.

5. Recheck to make sure that there are no errors.

6. See that the total number of papers check.

7. The median must be recorded.

SAMPLE I

Scores on Papers arranged in Consecutive Order	Number of Papers in each group
67	1
54 50	2
46 45	2
44 41 40	3
39 36 35	3
33 30	2
29 27 25	3
21 20	2
13	1
8	1
4	1
Total number of papers	21
Median	35

SAMPLE II

Scores Between	Number of papers having scores between
65—9	1
60—4	
55—9	
50—4	2
45—9	2
40—4	3
35—9	3
30—4	2
25—9	3
20—4	2
15—9	
10—4	1
5—9	1
0—4	1
Total No. of papers	21
Median	35

IMPORTANT STATEMENTS

1. The Every Pupil Scholarship Contest Report Sheet must be sent to the Bureau within four days after the test is given.

2. All Report Sheets must be certified by the teacher of the subject and by either the Superintendent or the Principal.

3. The Report Sheets will be of three colors—white, blue, and pink.

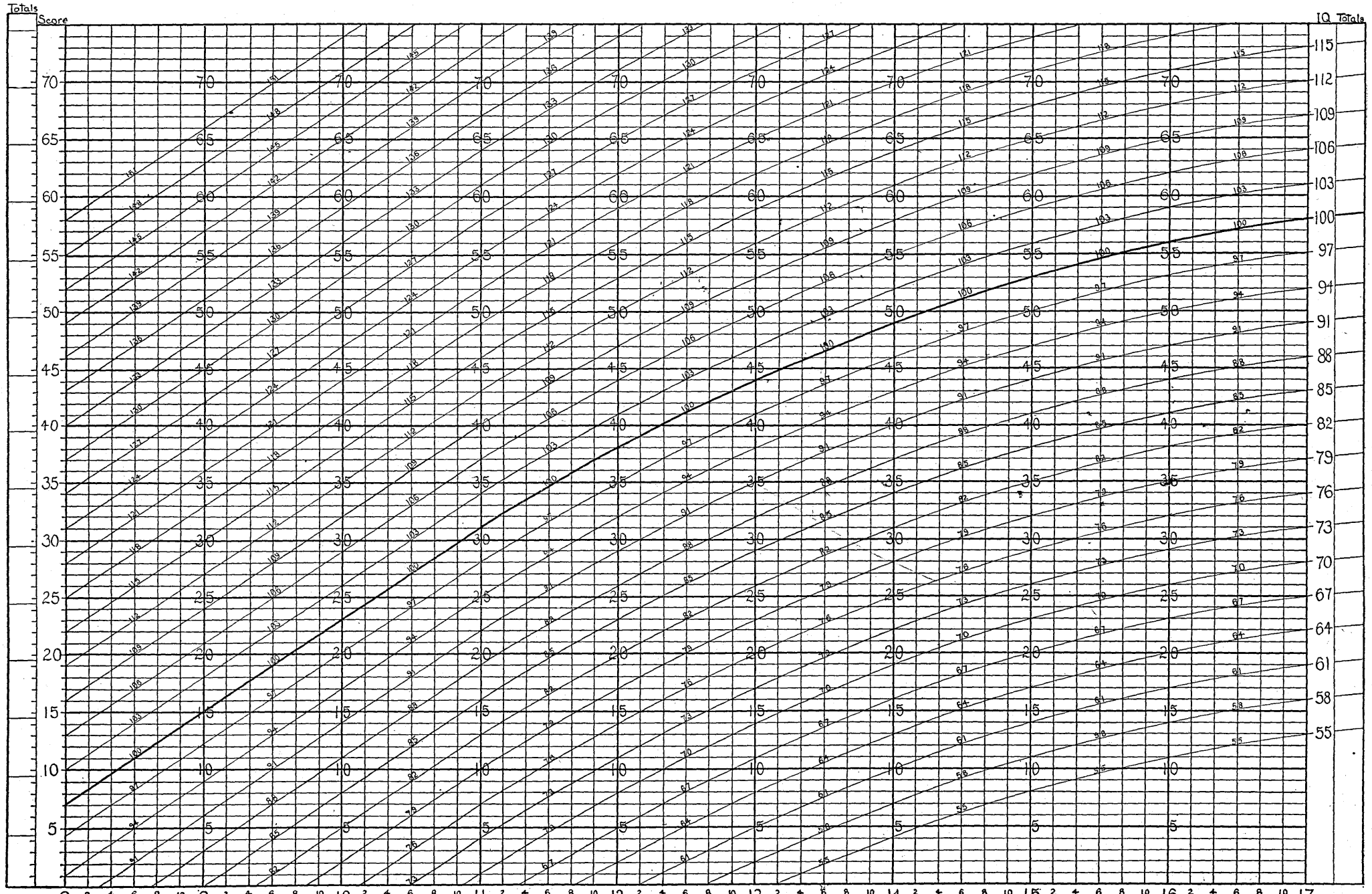
4. If you are not contesting with another school, be sure to return the Blue Scholarship Contest Report Sheet to the Bureau.

5. If you are contesting and desire the OK of the Bureau, return the following number of certified copies of the Scholarship Contest Report Sheet to the Bureau: A blue copy for the Bureau, a white copy for you, and a pink copy for each school you are contesting with. Suppose you are contesting with Athens High School in Algebra. You will send three certified copies (a white, a blue, and a pink) to the Bureau. If you are contesting with two high schools in Algebra, then you will send four certified copies (a white, a blue, and two pink) to the Bureau. The Bureau will check the records, stamp them, return the white copy to you, send the pink copies to the contesting schools, and keep the blue copy.

6. If you do not desire the OK of the Bureau, then send the pink copies directly to the school or schools you are contesting with. If you can do this it will save a delay in the exchange of your reports.

INTERPRETATION CHART. For Intermediate Examination

Grades plotted.....Number.....Form used.....Time limit.....min. Date.....19....



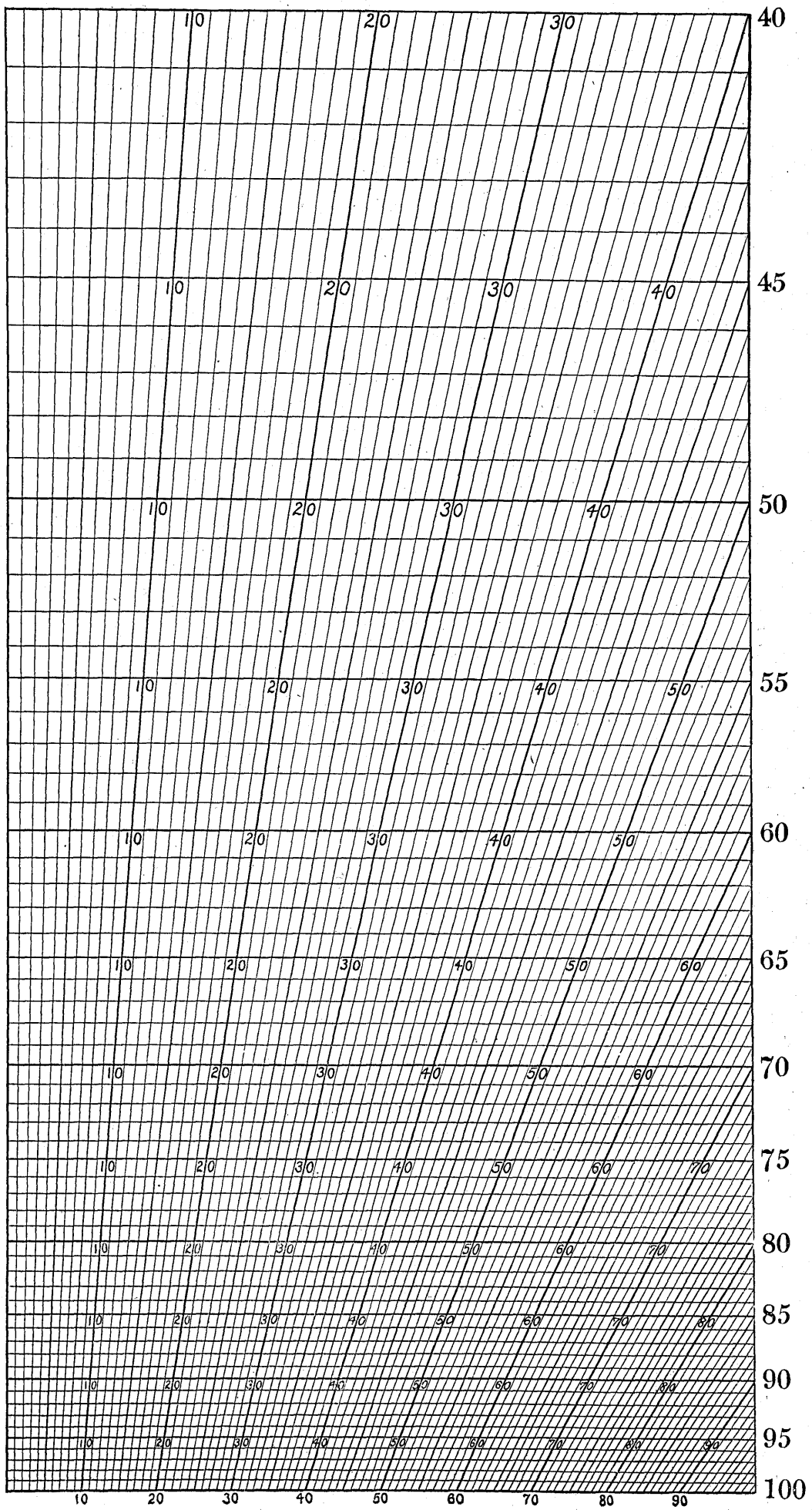
OTIS SELF-ADMINISTERING TESTS OF MENTAL ABILITY

PERCENTILE GRAPH

For Intermediate and Higher Examinations

Grade or Class							Examination
Number							School or College
Date of Exam.							Examiner
Form Used							Percentile Graph
Time Limit							
Score	Tally-ing	Sub-totals	Per cents	Tally-ing	Sub-totals	Per cents	0 10 20 30 40 50 60 70 80 90 100
75							75
70-74							70
65-69							65
60-64							60
55-59							55
50-54							50
45-49							45
40-44							40
35-39							35
30-34							30
25-29							25
20-24							20
15-19							15
10-14							10
5- 9							5
0- 4							0
Class Medians							0 10 20 30 40 50 60 70 80 90 100

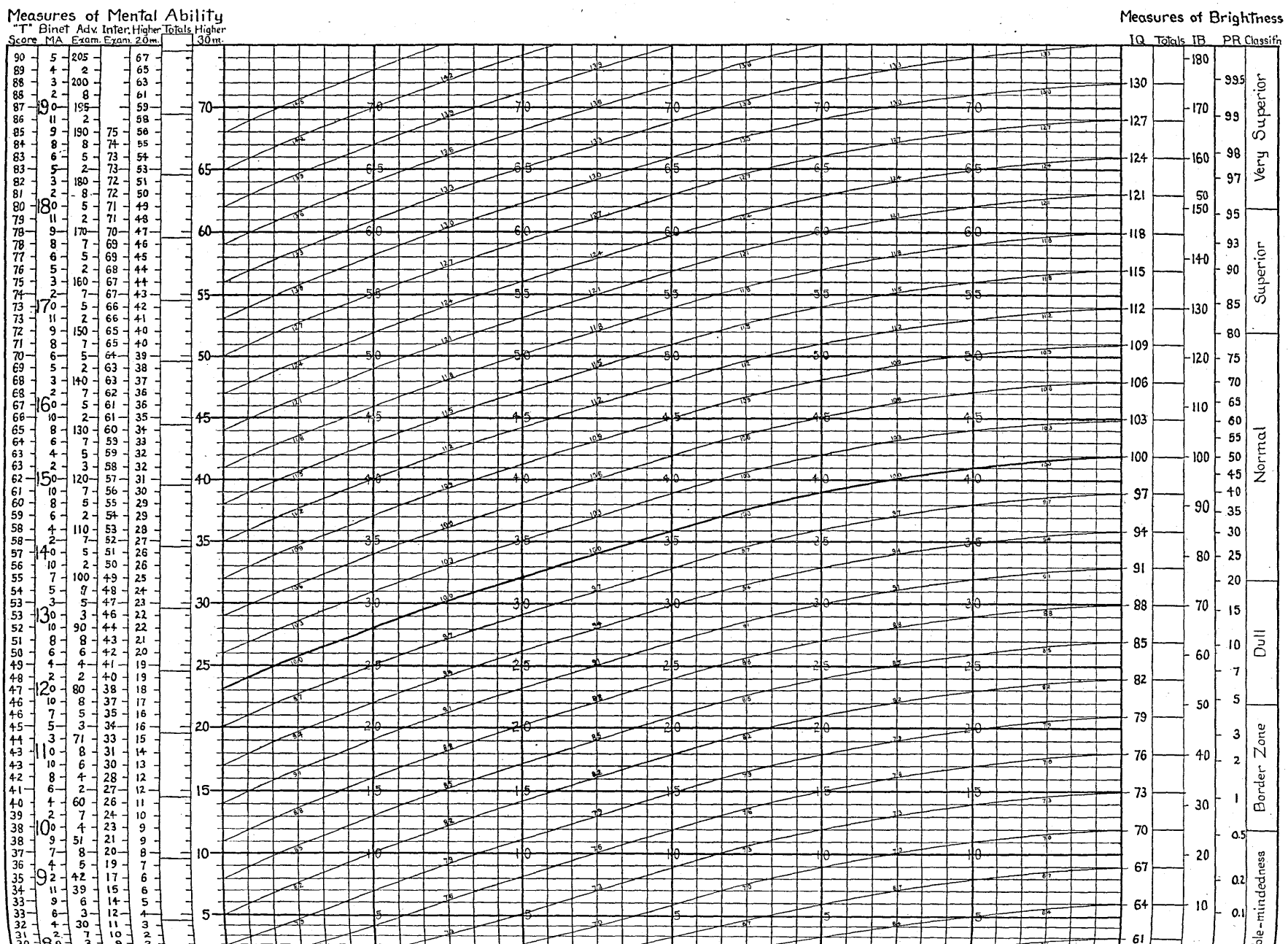
SCALE CHART



OTIS SELF-ADMINISTERING TESTS OF MENTAL ABILITY

INTERPRETATION CHART. For Higher Examination

Classes plotted.....Number.....Form used.....Time limit.....min. Date.....19....



OTIS GROUP INTELLIGENCE SCALE

Form..................

RECORD SHEET

City.............................. School or Institution.. Grade..................

Date of Exam.......................19...... Examiner.................................. Exam. No..................

No. of subject	Name	Age		Score in each of 10 tests (Adv. Exam.) or 8 tests (Prim. Exam.)										Total score	Norm	IB	PR
		Yrs.	Mos.	1	2	3	4	5	6	7	8	9	10				

(Record Sheet continued on next page.)

RECORD SHEET—(Continued)

No. of subject	Name	Age		Score in each of 10 tests (Adv. Exam.) or 8 tests (Prim. Exam.)										Total score	Norm	IB	PR
		Yrs.	Mos.	1	2	3	4	5	6	7	8	9	10				

Directions: Follow the directions for each part. The time to be allowed is 5 minutes for each of parts I and II, and 3 minutes for each of parts III, IV, and V.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

PRIMARY ACHIEVEMENT TEST

By Mayme McCarter and Kathryn Kayser
K. S. T. C., Emporia, Kansas.

61
TOTAL NUMBER POINTS

Name Warren Moss Jr. Town Lincoln

School Central Age 7 Grade I

Teacher Mrs. C. Scott State Kansas Date April 4, 1930

PART I.

DIRECTIONS: Find the answer to each example and write it where it belongs. Begin at the top and work straight down in each row. When you have worked the row of samples, wait for the signal to begin before you start on the others. (Allow exactly 5 minutes for Part I.)

Samples

(a) Add 1 + 1 = 2

(b) Add 1 + 2 = 3

(c) Subtract 4 − 1 = 3

(d) Multiply 3 × 2 = 6

(1) Add 4 + 3 = 7

(2) Add 6 + 0 = 6

(3) Add 6, 4, 2, 5 = 17

(4) Subtract 7 − 3 = 4

(5) Add 18 + 4 = 22

(6) Subtract 13 − 6 = 7

(7) Subtract 16 − 5 = 11

(8) Add 23, 10, 77, 23 = 123

(9) Subtract 561 − 209 = 352

(10) Add 604, 183, 216 = 1003

(11) Subtract 4567 − 1389 =

(12) Multiply 3 × 6 = 18

(13) Multiply 2 × 9 = 18

(14) Multiply 0 × 7 = 0

(15) Multiply 352 × 3 =

(16) Multiply 483 × 4 =

(17) Divide 2) 12

(18) Divide 27 ÷ 3 =

(19) Divide 5) 126

(20) Divide 3) 304

PART II.

DIRECTIONS: Read each line and think which word is left out where the blank is. The word left out is always a number. Write that number in the blank. When you have done the samples, wait for the signal to begin before you start on the others.

Samples:

(a) One boy and one boy are ....2.... boys.
(b) Two apples and one apple are ..... apples.
(c) If Mary has two apples and eats one apple, she has ..... apples left.

(Allow exactly 5 minutes for Part II.)

1. Three birds and two birds are .5. birds.
2. Four chairs and two chairs are .6. chairs.
3. Jack is six years old. Alice is four years old. Jack is .2. years older than Alice.
4. Mother said she had hidden 14 Easter eggs. I have found 8. .6. are left for me to find.
5. Helen had nine paper dolls. She cut 7 more. She had .16. dolls.
6. Today is my birthday. I weigh 47 pounds. Last year I weighed 38 pounds. How many pounds have I gained? .9..
7. The book I am reading has 205 pages. I just finished 87 pages. How many pages have I to read? ....
8. Jane had 184 words in her spelling list. She had learned to spell 96. How many more had she to learn? ....
9. Jack put $2.58 in the school bank. His father gave him $1.29 more. How much did Jack have? ....
10. Walter sold 28 papers at 5c a copy. How much did he get for all? ....
11. Mary read a storybook through in 4 days. Each day she read 27 pages. There are ....pages in the book.
12. Billy's father paid 16 cents for postage stamps to mail some letters. Each stamp cost 2 cents. He mailed ....letters.
13. Jean earns 7c each day drying dishes. How long will it take her to earn enough to buy a doll that costs $3.80? ....
14. Joe earned $8.50 in 4 weeks. He earned .... per week.
15. Eight boys bought a tent costing $14.80. If they share equally, how much must each boy pay? ....

PART III.

DIRECTIONS: Draw a line under the word which is the correct answer to each question.

Samples:

(a) Which can see? chair dog bed
(b) Which one is red? ice orange apple
(c) Which one burns? water stone coal

(Allow exactly 3 minutes for Part III.)

1. Which one is green?
   cat dog grass sheep
2. Which one can sing?
   rabbit dog fish bird

3. Which one can walk?
ball boy nest house

4. Which one is tallest?
tree daisy rose sunflower

5. Which one is white?
coal brass gold snow

6. Which can go fastest?
train horse dog airplane

7. Which one swims?
chicken duck stone robin

8. Which one has wheels?
sled wagon doll top

9. Which can we eat?
clock table candle candy

10. Which is the oldest?
father boy baby grand-father

11. Which one can hear?
electric light woman picture snowball

12. Which one grows on a tree?
apple potato carrot oyster

13. Which one can fly?
building piano eagle truck

14. In which country is rice raised?
Alaska England China Africa

15. Which is most valuable?
clay diamonds cabbage

16. Which grows in a garden?
rag weed spinach cactus

17. In which do you ride?
veranda temple jinrikisha

18. Who crossed the ocean in an airplane?
Columbus Lincoln Lindbergh

19. Edison is:
a musician a minister an inventor

20. Great Britain is:
an island an ocean a continent

PART IV.

DIRECTIONS: Put a cross like this (+) before each sentence that is true. Before a sentence that is not true put a straight line like this (—)

Samples: (+) (a) Birds can fly.
(—) (b) Cows can sing.
( ) (c) A sheep can talk.
( ) (d) Snow is white.

Remember (+) means true and (—) means not true.

(Allow exactly 3 minutes for this part.)

(—) 1. A rabbit has a long tail.
(—) 2. The sun comes up at night.
(+) 3. Birds can sing.
(—) 4. All apples are yellow.
(+) 5. I live in a house.
(+) 6. Boys like to play.
(+) 7. You must dress warm in winter.
(+) 8. Trees are green in summr.
(+) 9. Ice is colder than fire.
(—) 10. Christmas comes in the month of December.
(—) 11. Twelve is more than thirteen.
(—) 12. A monkey is larger than an elephant.
(+) 13. Iron is heavier than cotton.
(+) 14. Wednesday comes before Thursday.
(+) 15. People usually carry umbrellas when it rains.
(+) 16. People sometimes light their homes with electricity.
(—) 17. Automobiles are more expensive than potatoes.
(—) 18. Patriotism is a love for one's country.
(—) 19. The medicine man of the Indian tribe is a highly respected member of the tribe.
(—) 20. The Eskimo inhabits the desert regions.

PART V.

DIRECTIONS: First read the little story. Then read the sentences under the story and draw a line under the word or words which makes each correct.

Sample: Two birds had a nest in a tree. They sang all day. They sang because they were happy. In a few days there would be baby birds in the nest.

(a) Some birds had a: nest worm string
(b) They were: sad angry happy
(c) Little birds would be in the nest: in a day in a few days in many weeks

(Allow exactly 3 minutes for this part.)

I.

When Jack got up the ground was white with snow. He found his sled and went for a ride. Then he made a snow house.

1. Jack saw: the sky the snow the rain
2. He went for a ride on his: train sled pony
3. He made a house of: brick stone snow

II.

Mary and Billy went to see their grand-mother. She lived in the country. Billy liked to drive the horses. Mary liked to throw grain to the chickens.

4. Mary and Billy went to see their: uncle grand-mother aunt
5. She lived: in town in the city on a farm
6. Billy wanted to drive the: horses chickens goats
7. Mary liked to give the chickens: sand water feed

III.

Tom had a dog and a cat. The dog was white with black spots. The cat was black with white spots. One day the dog ran away. Tom didn't see him for a week.

8. Tom's dog was: brown black black and white
9. Tom could not find his: cat hen dog
10. His dog came back in: a year seven days a month

IV.

Alice had a birthday party. Her friends brought gifts to her. Mary gave her a doll that could go to sleep. Jane gave her a story book about a fairy queen. James gave her a top that would sing.

11. Mary gave Alice a: walking doll sleeping doll talking doll
12. James' gift was a: singing top jumping top bouncing top
13. Jane gave Mary a book with stories about: Indians kings fairies

V

Children have good times when school is out. They sometimes take trips to the mountains. Some children go to the country. Others go to the city and visit the zoo.

14. Children have fun: in cars in winter in vacation
15. Some go to the: mountains sea-shore the meadows
16. Some children like: the stories the street cars the animals

VI.

A man who owned a store advertised for a boy to work for him. He wanted a helper who was industrious. Jack and John asked for the job. John was a boy who never wasted time. Jack played all day.

17. The man gave the job to: Jack John

Directions: Follow the directions for each part. The time to be allowed is 5 minutes for each of parts I and II, and 3 minutes for each of parts III, IV, and V.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

PRIMARY ACHIEVEMENT TEST

By Mayme McCarter and Kathryn Kayser
K. S. T. C., Emporia, Kansas.

59
TOTAL NUMBER POINTS

Name [illegible] Town Lincoln
School Lincoln Age 7 Grade II
Teacher ____ State Kansas Date April 4 1930

PART I.

DIRECTIONS: Find the answer to each example and write it where it belongs. Begin at the top and work straight down in each row. When you have worked the row of samples, wait for the signal to begin before you start on the others. (Allow exactly 5 minutes for Part I.)

Samples

(a) Add 1 + 1 = 2

(b) Add 1 + 2 = 3

(c) Subtract 4 − 1 = 3

(d) Multiply 3 × 2 = 6

(1) Add 4 + 3 = 6

(2) Add 6 + 0 = 6

(3) Add 6, 4, 2, 5 = 17

(4) Subtract 7 − 3 = 4

(5) Add 18 + 4 = 22

(6) Subtract 13 − 6 = 7

(7) Subtract 16 − 5 = 10

(8) Add 23, 10, 77, 23 = 123

(9) Subtract 561 − 209 = 770

(10) Add 604, 183, 216 = 193

(11) Subtract 4567 − 1389 = 5807

(12) Multiply 3 × 6 = 18

(13) Multiply 2 × 9 = 18

(14) Multiply 0 × 7 = 7

(15) Multiply 352 × 3 = 206

(16) Multiply 483 × 4 = 372

(17) Divide 2) 12 = 01

(18) Divide 27 ÷ 3 = 0

(19) Divide 5) 126 = 005

(20) Divide 3) 304 = 101

PART II.

DIRECTIONS: Read each line and think which word is left out where the blank is. The word left out is always a number. Write that number in the blank. When you have done the samples, wait for the signal to begin before you start on the others.

Samples:

(a) One boy and one boy are ....2.... boys.
(b) Two apples and one apple are ....3.... apples.
(c) If Mary has two apples and eats one apple, she has ....1..... apples left.

(Allow exactly 5 minutes for Part II.)

1. Three birds and two birds are .5. . birds.
2. Four chairs and two chairs are .6. . chairs.
3. Jack is six years old. Alice is four years old. Jack is .2. . years older than Alice.
4. Mother said she had hidden 14 Easter eggs. I have found 8. .6. are left for me to find.
5. Helen had nine paper dolls. She cut 7 more. She had .16. dolls.
6. Today is my birthday. I weigh 47 pounds. Last year I weighed 38 pounds. How many pounds have I gained? .9.
7. The book I am reading has 205 pages. I just finished 87 pages. How many pages have I to read? .118.
8. Jane had 184 words in her spelling list. She had learned to spell 96. How many more had she to learn? .88.
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15. Eight boys bought a tent costing $14.80. If they share equally, how much must each boy pay? .1.85.

PART III.

DIRECTIONS: Draw a line under the word which is the correct answer to each question.

Samples:

(a) Which can see? chair dog bed
(b) Which one is red? ice orange apple
(c) Which one burns? water stone coal

(Allow exactly 3 minutes for Part III.)

1. Which one is green?
   cat dog grass sheep
2. Which one can sing?
   rabbit dog fish bird

3. Which one can walk?
   ball boy nest house
4. Which one is tallest?
   tree daisy rose sunflower
5. Which one is white?
   coal brass gold snow
6. Which can go fastest?
   train horse dog airplane
7. Which one swims?
   chicken duck stone robin
8. Which one has wheels?
   sled wagon doll top
9. Which can we eat?
   clock table candle candy
10. Which is the oldest?
    father boy baby grand-father
11. Which one can hear?
    electric light woman picture snowball
12. Which one grows on a tree?
    apple potato carrot oyster
13. Which one can fly?
    building piano eagle truck
14. In which country is rice raised?
    Alaska England China Africa
15. Which is most valuable?
    clay diamonds cabbage
16. Which grows in a garden?
    rag weed spinach cactus
17. In which do you ride?
    veranda temple jinrikisha
18. Who crossed the ocean in an airplane?
    Columbus Lincoln Lindbergh
19. Edison is:
    a musician a minister an inventor
20. Great Britain is:
    an island an ocean a continent

PART IV.

DIRECTIONS: Put a cross like this (+) before each sentence that is true. Before a sentence that is not true put a straight line like this (—)

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(Allow exactly 3 minutes for this part.)

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(+) 6. Boys like to play.
(+) 7. You must dress warm in winter.
(+) 8. Trees are green in summer.
(+) 9. Ice is colder than fire.
(+) 10. Christmas comes in the month of December.
(+) 11. Twelve is more than thirteen.
(—) 12. A monkey is larger than an elephant.
(—) 13. Iron is heavier than cotton.
(—) 14. Wednesday comes before Thursday.
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(+) 16. People sometimes light their homes with electricity.
(+) 17. Automobiles are more expensive than potatoes.
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(+) 19. The medicine man of the Indian tribe is a highly respected member of the tribe.
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(a) Some birds had a: nest worm string
(b) They were: sad angry happy
(c) Little birds would be in the nest: in a day in a few days in many weeks

(Allow exactly 3 minutes for this part.)

I.

When Jack got up the ground was white with snow. He found his sled and went for a ride. Then he made a snow house.

1. Jack saw: the sky the snow the rain
2. He went for a ride on his: train sled pony
3. He made a house of: brick stone snow

II.

Mary and Billy went to see their grand-mother. She lived in the country. Billy liked to drive the horses. Mary liked to throw grain to the chickens.

4. Mary and Billy went to see their: uncle grand-mother aunt
5. She lived: in town in the city on a farm
6. Billy wanted to drive the: horses chickens goats
7. Mary liked to give the chickens: sand water feed

III.

Tom had a dog and a cat. The dog was white with black spots. The cat was black with white spots. One day the dog ran away. Tom didn't see him for a week.

8. Tom's dog was: brown black black and white
9. Tom could not find his: cat hen dog
10. His dog came back in: a year seven days a month

IV.

Alice had a birthday party. Her friends brought gifts to her. Mary gave her a doll that could go to sleep. Jane gave her a story book about a fairy queen. James gave her a top that would sing.

11. Mary gave Alice a: walking doll sleeping doll talking doll
12. James' gift was a: singing top jumping top bouncing top
13. Jane gave Mary a book with stories about: Indians kings fairies

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Children have good times when school is out. They sometimes take trips to the mountains. Some children go to the country. Others go to the city and visit the zoo.

14. Children have fun: in cars in winter in vacation
15. Some go to the: mountains sea-shore the meadows
16. Some children like: the stories the street cars the animals

VI.

A man who owned a store advertised for a boy to work for him. He wanted a helper who was industrious. Jack and John asked for the job. John was a boy who never wasted time. Jack played all day.

17. The man gave the job to: Jack John

Directions: Follow the directions for each part. The time to be allowed is 5 minutes for each of parts I and II, and 3 minutes for each of parts III, IV, and V.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

PRIMARY ACHIEVEMENT TEST

By Mayme McCarter and Kathryn Kayser
K. S. T. C., Emporia, Kansas.

76

TOTAL NUMBER POINTS

Name Dolores Ann Abbott Town Lincoln

School Central Age 8 Grade Third

Teacher Miss Knapp State Kansas Date April 4/1930

PART I.

DIRECTIONS: Find the answer to each example and write it where it belongs. Begin at the top and work straight down in each row. When you have worked the row of samples, wait for the signal to begin before you start on the others. (Allow exactly 5 minutes for Part I.)

Samples	(1)	(6)	(11)	(16)
(a) Add 1 + 1 = 2	Add 4 + 3 = 7	Subtract 13 − 6 = 7	Subtract 4567 − 1389 = 3178	Multiply 3 483 × 4 = 1932
	(2)	(7)		
	Add 6 + 0 = 6	Subtract 16 − 5 = 11	(12) Multiply 3 × 6 = 18	(17) Divide 2) 12 = 6
(b) Add 1 + 2 = 3	(3)	(8)		
	Add 6, 4, 2, 5 = 17	Add 23, 10, 77, 23 = 133	(13) Multiply 2 × 9 = 18	(18) Divide 27 ÷ 3 = 9
(c) Subtract 4 − 1 = 3	(4)	(9)	(14) Multiply 0 × 7 = 7	(19) Divide 5) 126
	Subtract 7 − 3 = 4	Subtract 611 − 209 = 352		
(d) Multiply 3 × 2 = 6	(5)	(10)	(15)	(20)
	Add 18 + 4 = 14	Add 604, 183, 216 = 1003	Multiply 352 × 3 = 1056	Divide 3) 304

PART II.

DIRECTIONS: Read each line and think which word is left out where the blank is. The word left out is always a number. Write that number in the blank. When you have done the samples, wait for the signal to begin before you start on the others.

Samples:

(a) One boy and one boy are ....2.... boys.
(b) Two apples and one apple are ...3... apples.
(c) If Mary has two apples and eats one apple, she has .....1..... apples left.

(Allow exactly 5 minutes for Part II.)

1. Three birds and two birds are .5.. birds.
2. Four chairs and two chairs are .6.. chairs.
3. Jack is six years old. Alice is four years old. Jack is .2.. years older than Alice.
4. Mother said she had hidden 14 Easter eggs. I have found 8. 6.... are left for me to find.
5. Helen had nine paper dolls. She cut 7 more. She had .16. dolls.
6. Today is my birthday. I weigh 47 pounds. Last year I weighed 38 pounds. How many pounds have I gained? .9..
7. The book I am reading has 205 pages. I just finished 87 pages. How many pages have I to read? 118.
8. Jane had 184 words in her spelling list. She had learned to spell 96. How many more had she to learn? 187.
9. Jack put $2.58 in the school bank. His father gave him $1.29 more. How much did Jack have? ....
10. Walter sold 28 papers at 5c a copy. How much did he get for all? ....
11. Mary read a storybook through in 4 days. Each day she read 27 pages. There are .... pages in the book.
12. Billy's father paid 16 cents for postage stamps to mail some letters. Each stamp cost 2 cents. He mailed .... letters.
13. Jean earns 7c each day drying dishes. How long will it take her to earn enough to buy a doll that costs $3.80? ....
14. Joe earned $8.50 in 4 weeks. He earned .... per week.
15. Eight boys bought a tent costing $14.80. If they share equally, how much must each boy pay? ....

PART III.

DIRECTIONS: Draw a line under the word which is the correct answer to each question.

Samples:

(a) Which can see? chair dog bed
(b) Which one is red? ice orange apple
(c) Which one burns? water stone coal

(Allow exactly 3 minutes for Part III.)

1. Which one is green?
   cat dog grass sheep
2. Which one can sing?
   rabbit dog fish bird

3. Which one can walk?
ball boy nest house

4. Which one is tallest?
tree daisy rose sunflower

5. Which one is white?
coal brass gold snow

6. Which can go fastest?
train horse dog airplane

7. Which one swims?
chicken duck stone robin

8. Which one has wheels?
sled wagon doll top

9. Which can we eat?
clock table candle candy

10. Which is the oldest?
father boy baby grand-father

11. Which one can hear?
electric light woman picture
snowball

12. Which one grows on a tree?
apple potato carrot oyster

13. Which one can fly?
building piano eagle truck

14. In which country is rice raised?
Alaska England China Africa

15. Which is most valuable?
clay diamonds cabbage

16. Which grows in a garden?
rag weed spinach cactus

17. In which do you ride?
veranda temple jinrikisha

18. Who crossed the ocean in an airplane?
Columbus Lincoln Lindbergh

19. Edison is:
a musician a minister an inventor

20. Great Britain is:
an island an ocean a continent

PART IV.

DIRECTIONS: Put a cross like this (+) before each sentence that is true. Before a sentence that is not true put a straight line like this (—)

Samples: (+) (a) Birds can fly.
(—) (b) Cows can sing.
(—) (c) A sheep can talk.
(+) (d) Snow is white.

Remember (+) means true and (—) means not true.

(Allow exactly 3 minutes for this part.)

(—) 1. A rabbit has a long tail.
(—) 2. The sun comes up at night.
(+) 3. Birds can sing.
(—) 4. All apples are yellow.
(+) 5. I live in a house.
(+) 6. Boys like to play.
(+) 7. You must dress warm in winter.
(+) 8. Trees are green in summer.
(—) 9. Ice is colder than fire.
(+) 10. Christmas comes in the month of December.
(—) 11. Twelve is more than thirteen.
(—) 12. A monkey is larger than an elephant.
(+) 13. Iron is heavier than cotton.
(—) 14. Wednesday comes before Thursday.
(+) 15. People usually carry umbrellas when it rains.
(+) 16. People sometimes light their homes with electricity.
(+) 17. Automobiles are more expensive than potatoes.
(—) 18. Patriotism is a love for one's country.
(+) 19. The medicine man of the Indian tribe is a highly respected member of the tribe.
(—) 20. The Eskimo inhabits the desert regions.

PART V.

DIRECTIONS: First read the little story. Then read the sentences under the story and draw a line under the word or words which makes each correct.

Sample: Two birds had a nest in a tree. They sang all day. They sang because they were happy. In a few days there would be baby birds in the nest.

(a) Some birds had a: nest worm string
(b) They were: sad angry happy
(c) Little birds would be in the nest: in a day in a few days in many weeks

(Allow exactly 8 minutes for this part.)

I.

When Jack got up the ground was white with snow. He found his sled and went for a ride. Then he made a snow house.

1. Jack saw: the sky the snow the rain
2. He went for a ride on his: train sled pony
3. He made a house of: brick stone snow

II.

Mary and Billy went to see their grand-mother. She lived in the country. Billy liked to drive the horses. Mary liked to throw grain to the chickens.

4. Mary and Billy went to see their: uncle grand-mother aunt
5. She lived: in town in the city on a farm
6. Billy wanted to drive the: horses chickens goats
7. Mary liked to give the chickens: sand water feed

III.

Tom had a dog and a cat. The dog was white with black spots. The cat was black with white spots. One day the dog ran away. Tom didn't see him for a week.

8. Tom's dog was: brown black black and white
9. Tom could not find his: cat hen dog
10. His dog came back in: a year seven days a month

IV.

Alice had a birthday party. Her friends brought gifts to her. Mary gave her a doll that could go to sleep. Jane gave her a story book about a fairy queen. James gave her a top that would sing.

11. Mary gave Alice a: walking doll sleeping doll talking doll
12. James' gift was a: singing top jumping top bouncing top
13. Jane gave Mary a book with stories about: Indians kings fairies

V

Children have good times when school is out. They sometimes take trips to the mountains. Some children go to the country. Others go to the city and visit the zoo.

14. Children have fun: in cars in winter in vacation
15. Some go to the: mountains sea-shore the meadows
16. Some children like: the stories the street cars the animals

VI.

A man who owned a store advertised for a boy to work for him. He wanted a helper who was industrious. Jack and John asked for the job. John was a boy who never wasted time. Jack played all day.

17. The man gave the job to: Jack John

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

GEOGRAPHY

By J. B. Stroud,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas Geography teachers.

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 20 minutes.

58
TOTAL NUMBER POINTS

Name Helen Page Town Lincoln

School Lincoln Jr. High Age 12 yrs. Grade 7B

Teacher Miss Olsen State Kansas Date April 4, 1930

DIRECTIONS: Read the following sentences carefully. If a statement is true, place a plus (+) in the parenthesis in front of the statement, as in example A below. If the statement is false, make a minus (—) in the parenthesis in front of it as in example B. Make the + and the — small and clear.

Examples: (+) A. Apples are good to eat.
(—) B. Potatoes grow on trees.

PART I.

(—) 1. Europe has no great cotton belt.
(—) 2. North America has more people than any other continent.
(+) 3. Japan's chief export is tea.
(+) 4. Egypt is a country in Africa.
(—) 5. The Po River flows across the southern part of Russia.
(+) 6. The Thames is a river in southeastern England.
(—) 7. The chief industry in England is agriculture.
(+) 8. The Rhine river flows south through Germany.
(—) 9. Moscow is a city in Poland.
(+) 10. Valparaiso is a city in Chile.
(—) 11. Vienna is a city in Italy.
(+) 12. The largest river in the world is the Amazon.
(—) 13. Peking is a city in Japan.
(+) 14. The Nile flows south through Egypt.
(—) 15. Ceylon is an island just off the coast of South Africa.
(—) 16. The Andes is the largest mountain in Mexico.
(—) 17. Plains covered with rich grass in Argentina are called Tundras.
(+) 18. Belfast is a city in Ireland.
(+) 19. Borneo is an island southeast of Indo-China.
(+) 20. Death Valley is in California.
(+) 21. The Missouri River touches Minnesota.
(—) 22. Madrid is a city in southern France.
(+) 23. Georgia is the greatest cotton producing state in America.
(—) 24. Melbourne is a city in New Zealand.
(+) 25. The capital of New Hampshire is Montpelier.
(+) 26. Georgia has the largest area of any state east of the Mississippi.
(+) 27. Ohio ranks second in wealth among the states of the United States.
(+) 28. The capital of Oregon is Salem.
(+) 29. Cape Town is a city in Africa.
(+) 30. Milwaukee is the capital of Wisconsin.
(—) 31. Birmingham, Alabama, is one of the leading cities in the production of iron.
(+) 32. Indiana is a leading state in the production of iron ore.
(+) 33. The St. Lawrence river flows northeast.
(+) 34. Snow never falls in the West Indies.
(—) 35. The Island of Jamaica is in the Caribbean Sea.
(+) 36. The Rio Grande River is a natural boundary between Arizona and Mexico.
(+) 37. The Mississippi River is navigable as far north as St. Paul.
(—) 38. New York is the greatest cotton exporting point in the United States.
(+) 39. The Amazon River empties into the Atlantic Ocean.
(—) 40. The Orinoco River is the largest river in South America.
(+) 41. Argentina is similar to Kansas in climate.
(+) 42. Asia is called the "cradle of civilization."
(—) 43. The White Mountains are the largest range of mountains east of the Mississippi.
(+) 44. Pennsylvania is the second state in the United States in population.

PART II.

DIRECTIONS: Place the number of the part which makes the best answer to the statement in the parenthesis before the statement.

(3) The largest city in America is: **1. Detroit. 2. Washington. 3. New York. 4. Chicago.**

In this sample "New York" is the correct answer. The number in front of the word "New York" is "3." The figure 3 has been placed in the parenthesis.

(3) 45. Vienna is located on the: **1. Po River. 2. Rhine River. 3. Danube River. 4. Mediterranean Sea.**
(2) 46. A country that borders on the Med-

iterranean Sea is: **1. Rumania. 2. France. 3. Austria. 4. Bulgaria.**

(1) 47. Madagascar belongs to: **1. England. 2. France. 3. Germany. 4. Holland.**

(4) 48. The northern part of Europe is warmer than the northern part of North America because: **1. it is protected from the winds. 2. it is nearer the equator. 3. it has more coast line. 4. It is warmed by winds from the Gulf Stream.**

(3) 49. Very little coal is needed for manufacturing in Switzerland because: **1. there are few factories. 2. all manufactured articles are shipped in. 3. the Swiss have harnessed the waterfalls and turned their power into electricity. 4. the Swiss need very few manufactured articles.**

(1) 50. The rivers of Siberia are of limited commercial value because: **1. they are always frozen over. 2. they are too shallow. 3. there are too many rapids. 4. they flow north toward a land of snow and ice.**

(3) 51. Little is known about the Himalaya Mountains because: **1. they are shut in with snow. 2. people have never tried to explore them. 3. travel is almost impossible. 4. there is a scarcity of food.**

(4) 52. South America is a sparsely settled continent because of: **1. hostile natives. 2. its surface and climate. 3. few navigable rivers. 4. the jungles.**

(3) 53. The United States gained control of the Philippine Islands: **1. by purchase. 2. by annexation. 3. as a result of the Spanish American War. 4. by a treaty made with the native Queen.**

(1) 54. The capital of Poland is: **1. Warsaw. 2. Moscow. 3. Lodz. 4. Reval.**

(1) 55. An island city with canals for streets is: **1. Florence. 2. Corinth. 3. Venice. 4. Rome.**

(4) 56. The capital of Egypt is: **1. Alexandria. 2. Tunis. 3. Algiers. 4. Cairo.**

(4) 67. The capital of Brazil is: **1. Santos. 2. Sao Paulo. 3. Bahia. 4. Rio de Janeiro.**

(2) 58. The factories in the British Isles have grown chiefly because of: **1. energetic people. 2. the presence of coal and iron ore. 3. cool climate. 4. small countries.**

(2) 59. The second country in Europe in manufacturing is: **1. Norway. 2. France. 3. Holland. 4. Germany.**

(3) 60. The Pyramids are found in: **1. Europe. 2. Australia. 3. Africa. 4. North America.**

(4) 61. The continent which has the greatest area in square miles is: **1. South Africa. 2. Africa. 3. Australia. 4. Asia.**

(4) 62. The most important export of North America is: **1. petroleum. 2. cotton. 3. tobacco. 4. wheat.**

(2) 63. The cork-oak trees are found in abundance in: **1. Switzerland. 2. Portugal. 3. North America. 4. Russia.**

(4) 64. Spitzbergen belongs to: **1. Norway. 2. Sweden. 3. Holland. 4. Denmark.**

(3) 65. The Sahara Desert is in: **1. Asia. 2. Europe. 3. Africa. 4. Australia.**

(1) 66. A steppe is: **1. a flat plain with scanty grass. 2. an elevated plain. 3. a great region of hot grassland. 4. a marshy plain.**

(4) 67. The chief export of Japan is: **1. bamboo. 2. rice. 3. silk. 4. tea.**

(3) 68. The Yangtze Rivers is in: **1. India. 2. Japan. 3. China. 4. Indo-China.**

(3) 69. The Himalaya Mountains are in: **1. Australia. 2. Africa. 3. Asia. 4. Europe.**

(2) 70. The chief export of India is: **1. rice. 2. cotton. 3. cloth. 4. sugar. 5. silk.**

(4) 71. The chief export of Java is: **1. tobacco. 2. tea. 3. rubber. 4. sugar.**

(1) 72. The capital of Argentina is: **1. Buenos Aires. 2. Rio de Janeiro. 3. Santos. 4. Colombia.**

(2) 73. The highest mountain peak in Europe is: **1. Mt. McKinley. 2. Mt. Everest. 3. Mt. Blanc. 4. Mt. Aconcagua.**

(3) 74. The Kimberly diamond mines are in: **1. Europe. 2. Asia. 3. Africa. 4. South America.**

(4) 75. The Johannesburg gold mines are in: **1. Australia. 2. North America. 3. Asia. 4. Africa.**

(3) 76. The greatest coal exporter in the world is: **1. France. 2. United States. 3. England. 4. Germany.**

(4) 77. The Scandinavians live in: **1. France. 2. Germany. 3. Holland. 4. Norway and Sweden.**

(1) 78. **1. The Kiel Canal. 2. The Suez Canal. 3. The Panama Canal.** connects the Baltic Sea with the North Sea.

(4) 79. Locations of cities are determined by: **1. race. 2. nationality. 3. winds. 4. a break in the transportation.**

(4) 80. The highest mountain peak in North America is: **1. Mt. Logan. 2. Mt. Rainier. 3. Mt. Shasta. 4. Mt. McKinley.**

(3) 81. Lake Titicaca is located in: **1. France. 2. India. 3. Chile. 4. Spain.**

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April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 20 minutes.

AMERICAN HISTORY

By W. H. Gray,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas teachers of history.

23
TOTAL NUMBER POINTS

Name Roy M Dawson Town Lincoln

School Junior High School Age 12 Grade 7th A

Teacher Miss Murphy State Kansas Date April 4/1930

PART I.

DIRECTIONS: Read the following sentences carefully. If a statement is true, place a plus (+) in the parethesis in front of the statement, as in example A below. If the statement is false, make a minus (—) in the parenthesis in front of it as in example B. Make the + and the — small and clear.

Examples: (+) A. Apples are good to eat.
(—) B. Potatoes grow on trees.

(+) 1. Our city population has increased faster than our rural population since 1860.
(—) 2. As a general policy the Democratic Party has always stood for low tariff.
(+) 3. The Non-Intercourse Act permitted trade with all countries except England and France.
(+) 4. The Sixteenth Amendment gave the negroes the right to vote.
(—) 5. The Alien law made it easier for foreigners to come to America.
(—) 6. It is generally accepted today that a state has the right to refuse to obey an act of the United States Congress if the state considers the act harmful to its welfare.
(+) 7. Great Britain enforced her Trade Laws more severely in the colonies after the close of the French and Indian War.
(+) 8. President Harding was opposed to leasing government-owned oil lands to private business concerns for the purpose of extracting the oil.
(+) 9. Maryland was the last state to ratify the Articles of Confederation.
(+) 10. The President appoints judges to the United States Supreme Court.
(—) 11. The colonies exported large quantities of manufactured goods during colonial times.
(—) 12. The Puritans of Massachusetts Bay prohibited the use of alcoholic liquors.
(+) 13. The Soldiers' Bonus was allowed under the administration of Calvin Coolidge.
(—) 14. The panic of 1837 was caused by the total failure of wheat, corn, and potatoes.
(+) 15. The "carpet bagger" was a southern politician who went north to gain political privileges.
(+) 16. Roosevelt as president was in favor of the United States spending money to reclaim desert lands by irrigation.
(+) 17. Congress has the constitutional power to lay a tax on any articles exported from any state.
(+) 18. The "Liberator" was an abolitionist paper published by William Lloyd Garrison.
(—) 19. The Ku Klux Klan was organized for the purpose of bringing the Southern States back into the Union.
(+) 20. The American Federation of Labor organized laborers of separate trades into local Unions.
(+) 21. Woman Suffrage was granted by the nineteenth amendment to the constitution.
(+) 22. Woman Suffrage legislation conferred citizenship on women.
(+) 23. Th Alabama Claims were claims presented to Congress by the State of Alabama for damages done to property in the Civil War.
(+) 24. The Missouri Compromise provided that Missouri should enter the union as a slave state but all territory obtained from Louisiana west of Missouri and north of 36 degrees 30 minutes should be free.
(+) 25. The Hartford Convention met in 1814 to provide a more effective trade agreement with France.

PART II.

DIRECTIONS: Place the number of the correct word in the parenthesis before the statement. Look carefully at this sample.

(3) The first president of the United States was: **1. Harding. 2. Hamilton. 3. Washington. 4. Lincoln.**

In this sample, "Washington" is the correct answer. The number in front of the word

"Washington" is 3. The figure 3 has been placed in the parenthesis.

(4) 26. America was discovered by: 1. Cortez. 2. Ponce de Leon. 3. La Salle. 4. Columbus.

(1) 27. The Constitution of the United States was ratified in: (1) 1788. (2) 1787. (3) 1776. (4) 1789.

(2) 28. The Mississippi River was explored by: 1. Samuel de Champlain. 2. Robert La Salle. 3. Francisco Coronado. 4. Ferdinand Magellan.

(2) 29. George Washington was connected with: 1. Purchase of Louisiana. 2. Valley Forge. 3. X. Y. Z. Affair. 4. Gettysburg.

(1) 30. The New England colonies about 1765 derived most of their wealth from: 1. trading and fishing. 2. cotton manufactures. 3. banking. 4. flour milling. 5. dairy products.

(4) 31. The colonists resisted the Stamp Act because: 1. the stamps were too costly. 2. France urged them to resist. 3. they wished to separate from Great Britain. 4. they felt they were being taxed without their consent. 5. they wished to take revenge for the Boston Massacre.

(4) 32. Which event happened the longest time ago? 1. building of Panama Canal. 2. building of Roosevelt Dam. 3. building of Baltimore and Ohio Railway. 4. building of Erie Canal.

(3) 33. What is annexation? 1. annihilation of property. 2. loss of territory. 3. addition of land. 4. an inauguration.

(3) 34. An armistice is: 1. a treaty. 2. the surrender of an army. 3. a temporary cessation of warfare. 4. an order from a court.

(1) 36. One part of Hamilton's financial scheme was to establish: 1. a U. S. treasury system as we have it today. 2. a U. S. Bank with the government as a stockholder. 3. a number of State Banks for the accommodation of the citizens of the various states.

(4) 37. Daniel Webster was associated with: 1. Dred Scott Decision. 2. fight against nullification. 3. Clayton-Bulwer treaty. 4. Missouri Compromise.

(2) 38. The Civil Service Reform was passed during the administration of: 1. Grover Cleveland. 2. Theodore Roosevelt. 3. Andrew Jackson. 4. William Taft.

(1) 39. With which was Abraham Lincoln associated? 1. Emancipation Proclamation. 2. "Carpet baggers." 3. 14th Amendment. 4. Dred Scott Decision.

(3) 40. Which one of the following was a delegate to the First Continental Congress? 1. Thomas Jefferson. 2. John Hancock. 3. Benjamin Franklin. 4. Patrick Henry.

(3) 41. The Kansas-Nebraska Bill was passed in: (1) 1861. (2) 1854. (3) 1864. (4) 1852.

(4) 42. The year 1812 is noted for : 1. compromise. 2. victory on Lake Erie. 3. Hartford Convention. 4. war with Canada.

(2) 43. The X. Y. Z. Affair pertained to: 1. a secret organization formed in the North to free slaves. 2. an attempt of French representatives to extort a bribe from men sent to repsent us in France. 3. a secret aggreement between France and Spain to re-capture the territory north of the St. Lawrence River.

(2) 44. When America is spoken of as "A Melting Pot," it pertains to: 1. big manufacturing. 2. Americanizing of foreigners. 3. the many hot springs found in this country. 4. Southern states which become very hot in summer.

(1) 45. One of the chief reasons why the Puritans came to America was: 1. to seek religious freedom. 2. to convert the Indians. 3. to get possession of the land before the French settled it.

(1) 46. To arbitrate means: 1. to rule harshly. 2. to refuse to sell. 3. to offer for sale. 4. to boycott. 5. to refer to disinterested parties for settlement.

(4) 47. Which of the following events came first: 1. annexation of Texas. 2. Mexican War. 3. administration of Zachary Taylor. 4. establishment of the Treasury System.

(1) 48. As a general policy the Democratic Party has always: 1. stood for a high protective tariff. 2. stood for a tariff for revenue only. 3. been against tariff of any kind.

(3) 49. Cornwallis surrendered at: 1. Camden. 2. Charleston. 3. Yorktown. 4. Guilford Court House.

(3) 50. A provision of the Compromise of 1850 was: 1. Missouri should be admitted as a slave state. 2. all territory taken from Mexico in the Mexican War should be free. 3. California should be admitted as a slave state. 4. a more stringent fugitive slave law should be passed.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

AMERICAN HISTORY

By W. H. Gray,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas teachers of history.

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 20 minutes.

37
TOTAL NUMBER POINTS

Name Vinson Baccus Town Lincoln
School Junior High School Age 14 Grade 8th
Teacher Victor Murphy State Kansas Date Apr. 4, 1930.

PART I.

DIRECTIONS: Read the following sentences carefully. If a statement is true, place a plus (+) in the parethesis in front of the statement, as in example A below. If the statement is false, make a minus (—) in the parenthesis in front of it as in example B. Make the + and the — small and clear.

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(+) 24. The Missouri Compromise provided that Missouri should enter the union as a slave state but all territory obtained from Louisiana west of Missouri and north of 36 degrees 30 minutes should be free.
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PART II.

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(3) 36. One part of Hamilton's financial scheme was to establish: 1. a U. S. treasury system as we have it today. 2. a U. S. Bank with the government as a stockholder. 3. a number of State Banks for the accommodation of the citizens of the various states.

(2) 37. Daniel Webster was associated with: 1. Dred Scott Decision. 2. fight against nullification. 3. Clayton-Bulwer treaty. 4. Missouri Compromise.

(4) 38. The Civil Service Reform was passed during the administration of: 1. Grover Cleveland. 2. Theodore Roosevelt. 3. Andrew Jackson. 4. William Taft.

(1) 39. With which was Abraham Lincoln associated? 1. Emancipation Proclamation. 2. "Carpet baggers." 3. 14th Amendment. 4. Dred Scott Decision.

(1) 40. Which one of the following was a delegate to the First Continental Congress? 1. Thomas Jefferson. 2. John Hancock. 3. Benjamin Franklin. 4. Patrick Henry.

(3) 41. The Kansas-Nebraska Bill was passed in: (1) 1861. (2) 1854. (3) 1864. (4) 1852.

(2) 42. The year 1812 is noted for : 1. compromise. 2. victory on Lake Erie. 3. Hartford Convention. 4. war with Canada.

(2) 43. The X. Y. Z. Affair pertained to: 1. a secret organization formed in the North to free slaves. 2. an attempt of French representatives to extort a bribe from men sent to repsent us in France. 3. a secret aggreement between France and Spain to re-capture the territory north of the St. Lawrence River.

(2) 44. When America is spoken of as "A Melting Pot," it pertains to: 1. big manufacturing. 2. Americanizing of foreigners. 3. the many hot springs found in this country. 4. Southern states which become very hot in summer.

(1) 45. One of the chief reasons why the Puritans came to America was: 1. to seek religious freedom. 2. to convert the Indians. 3. to get possession of the land before the French settled it.

(5) 46. To arbitrate means: 1. to rule harshly. 2. to refuse to sell. 3. to offer for sale. 4. to boycott. 5. to refer to disinterested parties for settlement.

(4) 47. Which of the following events came first: 1. annexation of Texas. 2. Mexican War. 3. administration of Zachary Taylor. 4. establishment of the Treasury System.

(2) 48. As a general policy the Democratic Party has always: 1. stood for a high protective tariff. 2. stood for a tariff for revenue only. 3. been against tariff of any kind.

(3) 49. Cornwallis surrendered at: 1. Camden. 2. Charleston. 3. Yorktown. 4. Guilford Court House.

(1) 50. A provision of the Compromise of 1850 was: 1. Missouri should be admitted as a slave state. 2. all territory taken from Mexico in the Mexican War should be free. 3. California should be admitted as a slave state. 4. a more stringent fugitive slave law should be passed.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

LANGUAGE

By J. B. Stroud,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas teachers of English.

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

63
TOTAL NUMBER POINTS

Name Lucille Howe Town Lincoln

School North Ind Age 11 Grade 6a

Teacher Miss Savage State Kansas Date April 4

DIRECTIONS: This test consists of a number of sentences like the following examples:

Example A. (3) Apples **(1. grows, 2. grews, 3. grow)** on trees.

Of the three words in the parenthesis, the one which makes the sentence correct is to be chosen. In this example the word "grow" makes a correct sentence: "Apples grow on trees." To show that this word makes the sentence correct, its number, "3," has been placed in the parenthesis before the sentence.

Example B. ( ) **(1. These, 2. Them, 3. That, 4. Them there)** pictures are pretty.

In example "B" the one word, of those in the parenthesis, which makes the sentence correct is "These." This makes the sentence "These pictures are pretty." To show that "These" is the correct word in this sentence, place the figure "1" in the parenthesis before it.

Example C. ( ) The boys **(1. is, 2. are, 3. was, 4. ain't)** playing ball.

In example "C" which word makes a correct sentence? Now write the number before it in the parenthesis.

In each sentence choose the one word, of those in the parenthesis, which makes the sentence correct. Then write its number in the parenthesis before the sentence. Write nothing but the number.

DO NOT BEGIN UNTIL THE SIGNAL TO START IS GIVEN.

---

(2) 1. **(1. Us, 2. We)** girls are going to the movie.
(2) 2. The dogs **(1. is, 2. are, 3. am)** barking.
(3) 3. His wages **(1. was 2. is, 3. are)** small.
(~~1~~) 4. Is that **(1. her, 2. she)?**
(~~2~~) 5. The apple fell between her and **(1. me, 2. I).**
(3) 6. He has already **(1. go, 2. went, 3. gone).**
(4) 7. I **(1. written, 2. have wrote, 3. writed, 4. wrote)** two letters today.
(3) 8. It was **(1. me, 2. myself, 3. I)** who called you.
(~~3~~) 9. The father called her and **(1. he, 2. him, 3. himself).**
(2) 10. She was **(1. borned, 2. born)** in London.
(1) 11. Children **(1. like, 2. love, 3. likes)** to go on picnics.
(1) 12. My apple is larger than **(1. yours, 2. yourn).**
(2) 13. The girl divided her candy **(1. between, 2. among)** her four friends.
(1) 14. Helen **(1. will, 2. shall)** be ten years years old tomorrow.
(2) 15. Charity **(1. is when one gives, 2. means giving)** to the poor.
(1) 16. The murderer **(1. admitted, 2. declared, 3. contended)** he was guilty.
(2) 17. I **(1. taken, 2. took, 3. tooked, 4. taked)** the eggs to town.
(2) 18. He gave it to John and **(1. I, 2. me).**
(3) 19. Which is the **(1. greatest, 2. most, 3. more)** useful, gold or silver?
(~~2~~) 20. Neither she nor he **(1. is, 2. are, 3. have been)** rich.
(2) 21. I did not see **(1. none, 2. any, 3. some).**
(2) 22. His foot hurts **(1. bad, 2. badly).**
(1) 23. Both of **(1. us, 2. we)** boys are going.
(2) 24. Both of them **(1. is, 2. are, 3. am)** dear to me.
(2) 25. The airplane has **(1. flew, 2. flown, 3. flewed.)**
(1) 26. Mother, **(1. shall, 2. will)** I put more coal in the stove?
(1) 27. If I **(1. were, 2. was)** as large as you, I could do it too.
(3) 28. The hook is **(1. hisn, 2. himself's, 3. his).**
(1) 29. He is **(1. John's, 2. Johns', 3. Johns, 4. Johnses)** brother.
(1) 30. He sat **(1. beside, 2. besides)** me.
(2) 31. I **(1. remember of, 2. remember)** being there.

(1) 32. Peaches are **(1. plentiful, 2. plenty)** this season.
(2) 33. I have many books **(1. beside, 2. besides)** these.
(3) 34. The car hit the man **(1. square, 2. most square, 3. squarely).**
(1) 35. The whistle blew **(1. loudly, 2. loud, 3. most loud).**
(4) 36. Has the bell **(1. rang, 2. rung, 3. ringed)?**
(1) 37. She said she felt **(1. ill, 2. illy).**
(2) 38. It was **(1. me, 2. I, 3. myself)** who called him.
(1) 39. Mother says that I **(1. may, 2. can, 3. kin)** go.
(2) 40. My pencil is longer **(1. an, 2. than, 3. then)** yours.
(2) 41. I **(1. kindly, 2. rather, 3. sorter)** expected it.
(1) 42. If it **(1. were, 2. was)** to rain he would go.
(4) 43. There **(1. be, 2. am, 3. are, 4. is)** seven girls here.
(1) 44. He died **(1. with, 2. of)** pneumonia.
(1) 45. He got **(1. off, 2. off of, 3. from off of)** the platform.
(2) 46. Do you know who **(1. done, 2. did, 3. had did)** it?
(4) 47. Everyone **(1. were, 2. was, 3. have been)** at school today.
(2) 48. Every boy knew **(1. his, 2. their)** lessons.
(1) 49. I **(1. saw, 2. seen, 3. seed)** him do it.
(4) 50. Neither of the two **(1. write, 2. written, 3. writes, 4. have written)** well.
(3) 51. The boys **(1. is, 2. was, 3. were)** playing in the garden.
(2) 52. Jack, **(1. wasn't, 2. weren't, 3. was, 4. aren't)** you in school yesterday?
(1) 53. James's hat **(1. blew, 2. blown, 3. blowed)** off.
(3) 54. George **(1. beginned, 2. begun, 3. began)** reading.
(2) 55. The boy has **(1. ran, 2. run, 3. runned)** a mile.
(4) 56. The boy **(1. sat, 2. set, 3. sit, 4. seated)** himself under the tree.
(2) 57. We **(1. have got, 2. have)** measles.
(2) 58. We shall **(1. try to, 2. try and)** win the game.
(3) 59. Our house is **(1. het, 2. heat, 3. heated)** with steam.
(2) 60. Dorothy sings **(1. good, 2. well, 3. fine).**
(3) 61. The soldiers have **(1. come, 2. came, 3. went).**
(3) 62. How many dishes have you **(1. breaked, 2. broke, 3. broken, 4. braked)?**
(4) 63. The old woman **(1. can, 2. can't, 3. cannot, 4. couldn't)** hardly hear.
(2) 64. Will you pick **(1. them, 2. those, 3. these)** flowers beyond the brook for me?
(3) 65. The boys have **(1. ate, 2. eat, 3. eaten)** their supper.
(2) 66. **(1. Whom, 2. Who)** did you see there?
(2) 67. **(1. Whom, 2. Who)** was elected?
(1) 68. I am not so tall as **(1. she, 2. her, 3. herself).**
(2) 69. The child has **(1. sit, 2. sat, 3. set, 4. setted)** down.
(3) 70. The teacher **(1. teached, 2. learned, 3. taught)** her pupils.
(1) 71. I like **(1. this, 2. these, 3. those)** kind of apple.
(2) 72. The man said, "I will **(1. lay, 2. lie)** down."
(1) 73. The man **(1. sat, 2. set, 3. sit)** on a bench.
(1) 74. The balloon **(1. burst, 2. bursted, 3. busted).**
(3) 75. He **(1. sit, 2. sat, 3. set)** the bucket on the ground.
(2) 76. **(1. Can, 2. May, 3. Kin)** I write with your pencil?
(2) 77. She **(1. don't, 2. doesn't, 3. do not)** know her lessons.
(4) 78. The hen is **(1. setting, 2. sitting)** on sixteen eggs.

36

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

LANGUAGE

By J. B. Stroud,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas teachers of English.

49
TOTAL NUMBER POINTS

Name [illegible] Town [illegible]

School [illegible] Age 15 Grade 7

Teacher Miss [illegible] State Kansas Date April 4 1930

DIRECTIONS: This test consists of a number of sentences like the following examples:

Example A. (3) Apples **(1. grows, 2. grews, 3. grow)** on trees.

Of the three words in the parenthesis, the one which makes the sentence correct is to be chosen. In this example the word "grow" makes a correct sentence: "Apples grow on trees." To show that this word makes the sentence correct, its number, "3," has been placed in the parenthesis before the sentence.

Example B. ( ) **(1. These, 2. Them, 3. That, 4. Them there)** pictures are pretty.

In example "B" the one word, of those in the parenthesis, which makes the sentence correct is "These." This makes the sentence "These pictures are pretty." To show that "These" is the correct word in this sentence, place the figure "1" in the parenthesis before it.

Example C. ( ) The boys **(1. is, 2. are, 3. was, 4. ain't)** playing ball.

In example "C" which word makes a correct sentence? Now write the number before it in the parenthesis.

In each sentence choose the one word, of those in the parenthesis, which makes the sentence correct. Then write its number in the parenthesis before the sentence. Write nothing but the number.

DO NOT BEGIN UNTIL THE SIGNAL TO START IS GIVEN.

---

(2) 1. **(1. Us, 2. We)** girls are going to the movie.

(2) 2. The dogs **(1. is, 2. are, 3. am)** barking.

(3) 3. His wages **(1. was 2. is, 3. are)** small.

( ) 4. Is that **(1. her, 2. she)**?

(1) 5. The apple fell between her and **(1. me, 2. I)**.

(3) 6. He has already **(1. go, 2. went, 3. gone)**.

( ) 7. I **(1. written, 2. have wrote, 3. writed, 4. wrote)** two letters today.

( ) 8. It was **(1. me, 2. myself, 3. I)** who called you.

( ) 9. The father called her and **(1. he, 2. him, 3. himself)**.

( ) 10. She was **(1. borned, 2. born)** in London.

(1) 11. Children **(1. like, 2. love, 3. likes)** to go on picnics.

(1) 12. My apple is larger than **(1. yours, 2. yourn)**.

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(2) 14. Helen **(1. will, 2. shall)** be ten years years old tomorrow.

( ) 15. Charity **(1. is when one gives, 2. means giving)** to the poor.

( ) 16. The murderer **(1. admitted, 2. declared, 3. contended)** he was guilty.

(2) 17. I **(1. taken, 2. took, 3. tooked, 4. taked)** the eggs to town.

( ) 18. He gave it to John and **(1. I, 2. me)**.

(3) 19. Which is the **(1. greatest, 2. most, 3. more)** useful, gold or silver?

(1) 20. Neither she nor he **(1. is, 2. are, 3. have been)** rich.

( ) 21. I did not see **(1. none, 2. any, 3. some)**.

(2) 22. His foot hurts **(1. bad, 2. badly)**.

(1) 23. Both of **(1. us, 2. we)** boys are going.

(2) 24. Both of them **(1. is, 2. are, 3. am)** dear to me.

(2) 25. The airplane has **(1. flew, 2. flown, 3. flewed.)**

(2) 26. Mother, **(1. shall, 2. will)** I put more coal in the stove?

(1) 27. If I **(1. were, 2. was)** as large as you, I could do it too.

(3) 28. The hook is **(1. hisn, 2. himself's, 3. his)**.

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(1) 30. He sat **(1. beside, 2. besides)** me.

(2) 31. I **(1. remember of, 2. remember)** being there.

(2) 32. Peaches are **(1. plentiful, 2. plenty)** this season.
(2) 33. I have many books **(1. beside, 2. besides)** these.
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(2) 44. He died **(1. with, 2. of)** pneumonia.
(2) 45. He got **(1. off, 2. off of, 3. from off of)** the platform.
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(3) 50. Neither of the two **(1. write, 2. written, 3. writes, 4. have written)** well.
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(2) 52. Jack, **(1. wasn't, 2. weren't, 3. was, 4. aren't)** you in school yesterday?
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(3) 54. George **(1. beginned, 2. begun, 3. began)** reading.
(1) 55. The boy has **(1. ran, 2. run, 3. runned)** a mile.
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(2) 63. The old woman **(1. can, 2. can't, 3. cannot, 4. couldn't)** hardly hear.
(1) 64. Will you pick **(1. them, 2. those, 3. these)** flowers beyond the brook for me?
(3) 65. The boys have **(1. ate, 2. eat, 3. eaten)** their supper.
(2) 66. **(1. Whom, 2. Who)** did you see there?
(2) 67. **(1. Whom, 2. Who)** was elected?
(3) 68. I am not so tall as **(1. she, 2. her, 3. herself).**
(2) 69. The child has **(1. sit, 2. sat, 3. set, 4. setted)** down.
(3) 70. The teacher **(1. teached, 2. learned, 3. taught)** her pupils.
(2) 71. I like **(1. this, 2. these, 3. those)** kind of apple.
(1) 72. The man said, "I will **(1. lay, 2. lie)** down."
(3) 73. The man **(1. sat, 2. set, 3. sit)** on a bench.
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(1) 78. The hen is **(1. setting, 2. sitting)** on sixteen eggs.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
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LANGUAGE

By J. B. Stroud,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas teachers of English.

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

67
TOTAL NUMBER POINTS

Name Dorothy Stevens Town Lincoln
School Lincoln Jr. High Age 14 Grade 8
Teacher Miss Rose State Kansas Date April 4 1930

DIRECTIONS: This test consists of a number of sentences like the following examples:

Example A. (3) Apples **(1. grows, 2. grews, 3. grow)** on trees.

Of the three words in the parenthesis, the one which makes the sentence correct is to be chosen. In this example the word "grow" makes a correct sentence: "Apples grow on trees." To show that this word makes the sentence correct, its number, "3," has been placed in the parenthesis before the sentence.

Example B. (1) **(1. These, 2. Them, 3. That, 4. Them there)** pictures are pretty.

In example "B" the one word, of those in the parenthesis, which makes the sentence correct is "These." This makes the sentence "These pictures are pretty." To show that "These" is the correct word in this sentence, place the figure "1" in the parenthesis before it.

Example C. (2) The boys **(1. is, 2. are, 3. was, 4. ain't)** playing ball.

In example "C" which word makes a correct sentence? Now write the number before it in the parenthesis.

In each sentence choose the one word, of those in the parenthesis, which makes the sentence correct. Then write its number in the parenthesis before the sentence. Write nothing but the number.

DO NOT BEGIN UNTIL THE SIGNAL TO START IS GIVEN.

---

(2) 1. **(1. Us, 2. We)** girls are going to the movie.
(2) 2. The dogs **(1. is, 2. are, 3. am)** barking.
(3) 3. His wages **(1. was 2. is, 3. are)** small.
(2) 4. Is that **(1. her, 2. she)?**
(2) 5. The apple fell between her and **(1. me, 2. I).**
(3) 6. He has already **(1. go, 2. went, 3. gone).**
(4) 7. I **(1. written, 2. have wrote, 3. writed, 4. wrote)** two letters today.
(3) 8. It was **(1. me, 2. myself, 3. I)** who called you.
(2) 9. The father called her and **(1. he, 2. him, 3. himself).**
(2) 10. She was **(1. borned, 2. born)** in London.
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(1) 16. The murderer **(1. admitted, 2. declared, 3. contended)** he was guilty.
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(2) 36. Has the bell **(1. rang, 2. rung, 3. ringed)?**
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(~~1~~) 44. He died **(1. with, 2. of)** pneumonia.
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(2) 46. Do you know who **(1. done, 2. did, 3. had did)** it?
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(3) 51. The boys **(1. is, 2. was, 3. were)** playing in the garden.
(~~3~~) 52. Jack, **(1. wasn't, 2. weren't, 3. was, 4. aren't)** you in school yesterday?
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(2) 55. The boy has **(1. ran, 2. run, 3. runned)** a mile.
(4) 56. The boy **(1. sat, 2. set, 3. sit, 4. seated)** himself under the tree.
(2) 57. We **(1. have got, 2. have)** measles.
(~~2~~) 58. We shall **(1. try to, 2. try and)** win the game.
(3) 59. Our house is **(1. het, 2. heat, 3. heated)** with steam.
(2) 60. Dorothy sings **(1. good, 2. well, 3. fine).**
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(3) 62. How many dishes have you **(1. breaked, 2. broke, 3. broken, 4. braked)?**
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(~~1~~) 78. The hen is **(1. setting, 2. sitting)** on sixteen eggs.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

READING

By W. H. Gray,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas teachers of reading.

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

29
TOTAL NUMBER POINTS

Name Faunetta Mae Larrow Town Lincoln

School Central Age 10 Grade 4th

Teacher Miss Emily Curtis State Kansas Date April 4, 1930

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Now read Example A.

Example A: Little John ran down the road. He had a reading book in one hand, a spelling book in the other, and a lunch-box under his right arm.

1. (3) What was the boy's name? 1. Roy. 2. William. 3. John. 4. Dick.

The correct answer to question No. 1 is "John" and this is answer No. 3. Hence a figure "3" has been placed in the parenthesis before the statement.

2. (2) The boy was going to : 1. church. 2. school. 3. a party. 4. a circus.

The correct answer to statement No. 2 is "school." Hence a "2" has been placed before that statement.

3. (1) How did the boy travel? 1. on foot. 2. on horseback. 3. on skates. 4. by automobile. 5. by horse and buggy.

What is the correct answer to question No. 3? Write the correct number in the parenthesis before the question.

Now, when the signal to begin is given, read as many of the following paragraphs as possible and answer as many of the statements as you can. You will be allowed exactly fifteen minutes.

I.

Joe was very fond of riding to the mill with his father. One very hot day as we drove along the dusty road we saw a boy sitting on an old-fashioned rail fence.

1. (3) Joe liked to ride with his: 1. cousin. 2. dog. 3. father. 4. playmates. 5. mother.
2. (2) The time of year was: 1. spring. 2. summer. 3. autumn. 4. winter.
3. (1) The fence was made of: 1. wood. 2. stone. 3. wire. 4. cement. 5. rope.

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Once upon a time there was a farmer who had three sons. They were all idle fellows, and helped their father very little. One day the oldest son, named Peter, heard that the king wanted someone to take care of his rabbits.

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Evidences of what apparently represents a peculiar method used by aboriginal Americans in grinding corn or other materials are to be found in certain parts of Kentucky in the form of ancient mortars commonly known as "hominy-holes." They occur on the floor of rock shelters or in boulders at the entrance to such shelters in the cliff regions of the state, and consist of conical holes excavated in the rock and generally worn smooth and deep by long use. In or near such holes may usually be found the pestles which were evidently used for crushing or grinding the grain in the holes.

40. ( ) The hominy-holes are generally: 1. square. 2. shallow. 3. smooth and deep. 4. full of water. 5. of different shapes.

41. ( ) The places where the aborigines ground their grain are called: 1. grist mills. 2. choppers. 3. caverns. 4. hominy-holes. 5. pestles.

42. ( ) The grinding places were located in: 1. sand. 2. clay. 3. stone. 4. trees. 5. buildings.

XV.

It is sport to watch a fox expend the riches of his craftiness upon the matter of **pauses.** Scores of times I have watched foxes in the wilds, either when they were just normally moving about or when they were being pursued. A fox acts as if one enemy were just behind him, another right in front of him, and several on each side. If he comes to a slight obstruction, such as a fallen log, he will set his forefeet upon it, pause, and, enjoying the advantage of a slight elevation, will scrutinize the surrounding woods. A wild thing generally pauses at an obstacle, at a road, at a pathway, at a turn. Both a deer and a fox will usually pause at a fence, less to get a stance for jumping than just to look about.

43. ( ) When being pursued a fox acts as if: 1. he had no enemies. 2. he were surrounded by enemies. 4. all his enemies were just behind him. 5. all his enemies were in front of him.

44. ( ) When he comes to an obstruction he: 1. runs around it. 2. jumps over it quickly. 3.crawls under it. 4. sets his fore-feet upon it. 5. turns back.

45. ( ) A deer and a fox pause at an obstacle to: 1. get a stance for jumping. 2. to look about. 3. to mislead their enemies. 4. to rest.

XVI.

Mental tests are instruments of measurement and not means of making guesses or estimates. They are therefore to be distinguished from methods of rating individual abilities by means of rating scales. They issue in numerical scores which can be manipulated by mathematical processes and combined or compared with other numerical scores.

( ) 46. Mental tests are: 1. rating scales. 2. estimates of ability. 3. measuring devices . 4. guesses.

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Name Norman Bignell Town Linwood

School Central Age 10 Grade 5-B

Teacher Miss Emily State Kansas Date April 4, 1930

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Now read Example A.

Example A: Little John ran down the road. He had a reading book in one hand, a spelling book in the other, and a lunch-box under his right arm.

1. (3) What was the boy's name? 1. Roy. 2. William. 3. John. 4. Dick.

The correct answer to question No. 1 is "John" and this is answer No. 3. Hence a figure "3" has been placed in the parenthesis before the statement.

2. (2) The boy was going to : 1. church. 2. school. 3. a party. 4. a circus.

The correct answer to statement No. 2 is "school." Hence a "2" has been placed before that statement.

3. (1) How did the boy travel? 1. on foot. 2. on horseback. 3. on skates. 4. by automobile. 5. by horse and buggy.

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41. (1 4) The places where the aborigines ground their grain are called: 1. grist mills. 2. choppers. 3. caverns. 4. hominy-holes. 5. pestles.

42. (3) The grinding places were located in: 1. sand. 2. clay. 3. stone. 4. trees. 5. buildings.

XV.

It is sport to watch a fox expend the riches of his craftiness upon the matter of **pauses.** Scores of times I have watched foxes in the wilds, either when they were just normally moving about or when they were being pursued. A fox acts as if one enemy were just behind him, another right in front of him, and several on each side. If he comes to a slight obstruction, such as a fallen log, he will set his forefeet upon it, pause, and, enjoying the advantage of a slight elevation, will scrutinize the surrounding woods. A wild thing generally pauses at an obstacle, at a road, at a pathway, at a turn. Both a deer and a fox will usually pause at a fence, less to get a stance for jumping than just to look about.

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Mental tests are instruments of measurement and not means of making guesses or estimates. They are therefore to be distinguished from methods of rating individual abilities by means of rating scales. They issue in numerical scores which can be manipulated by mathematical processes and combined or compared with other numerical scores.

( ) 46. Mental tests are: 1. rating scales. 2. estimates of ability. 3. measuring devices . 4. guesses.

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EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

READING

By W. H. Gray,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas teachers of reading.

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

21
TOTAL NUMBER POINTS

Name Leona Howard Town Lincoln

School Central Age 14 Grade 6th

Teacher Miss Emily Curtis State Kansas Date April 4, 1930

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Now read Example A.

Example A: Little John ran down the road. He had a reading book in one hand, a spelling book in the other, and a lunch-box under his right arm.

1. (3) What was the boy's name? 1. Roy. 2. William. 3. John. 4. Dick.

The correct answer to question No. 1 is "John" and this is answer No. 3. Hence a figure "3" has been placed in the parenthesis before the statement.

2. (2) The boy was going to : 1. church. 2. school. 3. a party. 4. a circus.

The correct answer to statement No. 2 is "school." Hence a "2" has been placed before that statement.

3. (1) How did the boy travel? 1. on foot. 2. on horseback. 3. on skates. 4. by automobile. 5. by horse and buggy.

What is the correct answer to question No. 3? Write the correct number in the parenthesis before the question.

Now, when the signal to begin is given, read as many of the following paragraphs as possible and answer as many of the statements as you can. You will be allowed exactly fifteen minutes.

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Joe was very fond of riding to the mill with his father. One very hot day as we drove along the dusty road we saw a boy sitting on an old-fashioned rail fence.

1. (3) Joe liked to ride with his: 1. cousin. 2. dog. 3. father. 4. playmates. 5. mother.
2. (2) The time of year was: 1. spring. 2. summer. 3. autumn. 4. winter.
3. (3) The fence was made of: 1. wood. 2. stone. 3. wire. 4. cement. 5. rope.

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Once upon a time there was a farmer who had three sons. They were all idle fellows, and helped their father very little. One day the oldest son, named Peter, heard that the king wanted someone to take care of his rabbits.

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When Mary Anne finally came running out, however, they seemed to forget that she was different and to accept her as one of themselves. One or two stroked her dress with curious fingers, and then felt of their own scanty garments of tanned leather, as though wondering how there could be such a difference. Some bold ones even touched her bright soft hair so oddly unlike their rough black locks. But most of them seemed to waste little thought upon the strangeness of her white skin and her blue checked dress, but fell to teaching her how to play their games of ball or showing her their ponies, brown and black, pinto and dapple gray. The horses were grazing in a scattered herd all about the group of lodges for Gray Eagle's village, while it contained no very vast number of people, was very rich in Indian wealth, which is counted by the number of horses each family owns.

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XII.

The King of France and the Duke of Burgundy were now called in to hear the determination of King Lear about his youngest daughter and to know whether they would persist in their courtship of Cordelia, now that she was under her father's displeasure, and had no for-

tune to recommend her. The Duke of Burgundy would not take her to wife upon such a condition, but the King of France, saying that her virtues were a dowry above a kingdom, bade Cordelia take farewell of her father and be queen of him and of fair France. He called the Duke of Burgundy a waterish duke because his love for Cordelia had in a moment all run away like water.

34. ( ) This story teaches that a "waterish" person's friendship is: 1. lasting. 2. worthless. 3. pleasant. 4. desirable.

35. ( ) The Duke of Burgundy valued Cordelia for her: 1. fortune. 2. self. 3. beauty. 4. virtues.

36. ( ) The true lover was revealed because of Cordelia's: 1. beauty. 2. wealth. 3. prosperity. 4. misfortune.

XIII.

In the upper reaches of the North Platte valley, 25 miles below the canyon through which the river enters the state of Wyoming and near the little town of Saratoga, is a series of hot springs. The great medicinal value of these springs was known long ago to Indian tribes, and the surrounding land has been one of their favorite camping grounds. One of the springs has been found to produce over a million gallons of water a day, others are of great capacity also, and it is estimated that their total daily flow is easily between three and four million gallons.

37. ( ) The Indians camped near the springs because they: 1. liked to see the water flow. 2. could drown their enemies. 3. thought the water good for their health. 4. could build boats.

38. ( ) The hot springs are in: 1. California. 2. Nebraska. 3. Colorado. 4. Wyoming. 5. New Mexico.

39. ( ) The water flows from the springs: 1. in huge quantities. 2. slowly. 3. intermittently. 4. in pipes. 5. in thin streams.

XIV.

Evidences of what apparently represents a peculiar method used by aboriginal Americans in grinding corn or other materials are to be found in certain parts of Kentucky in the form of ancient mortars commonly known as "hominy-holes." They occur on the floor of rock shelters or in boulders at the entrance to such shelters in the cliff regions of the state, and consist of conical holes excavated in the rock and generally worn smooth and deep by long use. In or near such holes may usually be found the pestles which were evidently used for crushing or grinding the grain in the holes.

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It is sport to watch a fox expend the riches of his craftiness upon the matter of **pauses.** Scores of times I have watched foxes in the wilds, either when they were just normally moving about or when they were being pursued. A fox acts as if one enemy were just behind him, another right in front of him, and several on each side. If he comes to a slight obstruction, such as a fallen log, he will set his forefeet upon it, pause, and, enjoying the advantage of a slight elevation, will scrutinize the surrounding woods. A wild thing generally pauses at an obstacle, at a road, at a pathway, at a turn. Both a deer and a fox will usually pause at a fence, less to get a stance for jumping than just to look about.

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Name James Bird Town Lincoln

School Lincoln Jr High Age 12 Grade 7th

Teacher Miss Rose State Kansas Date April

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1. (3) What was the boy's name? 1. Roy. 2. William. 3. John. 4. Dick.

The correct answer to question No. 1 is "John" and this is answer No. 3. Hence a figure "3" has been placed in the parenthesis before the statement.

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3. (1) How did the boy travel? 1. on foot. 2. on horseback. 3. on skates. 4. by automobile. 5. by horse and buggy.

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The King of France and the Duke of Burgundy were now called in to hear the determination of King Lear about his youngest daughter and to know whether they would persist in their courtship of Cordelia, now that she was under her father's displeasure, and had no for-

tune to recommend her. The Duke of Burgundy would not take her to wife upon such a condition, but the King of France, saying that her virtues were a dowry above a kingdom, bade Cordelia take farewell of her father and be queen of him and of fair France. He called the Duke of Burgundy a waterish duke because his love for Cordelia had in a moment all run away like water.

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In the upper reaches of the North Platte valley, 25 miles below the canyon through which the river enters the state of Wyoming and near the little town of Saratoga, is a series of hot springs. The great medicinal value of these springs was known long ago to Indian tribes, and the surrounding land has been one of their favorite camping grounds. One of the springs has been found to produce over a million gallons of water a day, others are of great capacity also, and it is estimated that their total daily flow is easily between three and four million gallons.

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Evidences of what apparently represents a peculiar method used by aboriginal Americans in grinding corn or other materials are to be found in certain parts of Kentucky in the form of ancient mortars commonly known as "hominy-holes." They occur on the floor of rock shelters or in boulders at the entrance to such shelters in the cliff regions of the state, and consist of conical holes excavated in the rock and generally worn smooth and deep by long use. In or near such holes may usually be found the pestles which were evidently used for crushing or grinding the grain in the holes.

40. (3) The hominy-holes are generally: 1. square. 2. shallow. 3. smooth and deep. 4. full of water. 5. of different shapes.

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It is sport to watch a fox expend the riches of his craftiness upon the matter of **pauses.** Scores of times I have watched foxes in the wilds, either when they were just normally moving about or when they were being pursued. A fox acts as if one enemy were just behind him, another right in front of him, and several on each side. If he comes to a slight obstruction, such as a fallen log, he will set his forefeet upon it, pause, and, enjoying the advantage of a slight elevation, will scrutinize the surrounding woods. A wild thing generally pauses at an obstacle, at a road, at a pathway, at a turn. Both a deer and a fox will usually pause at a fence, less to get a stance for jumping than just to look about.

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XVI.

Mental tests are instruments of measurement and not means of making guesses or estimates. They are therefore to be distinguished from methods of rating individual abilities by means of rating scales. They issue in numerical scores which can be manipulated by' mathematical processes and combined or compared with other numerical scores.

(1) 46. Mental tests are: 1. rating scales. 2. estimates of ability. 3. measuring devices . 4. guesses.

(1) 47. Test results are compared by means of: 1. numerical devices. 2. teachers' judgments. 3. descriptions in words only. 4. watching the individual take the tests.

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EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

READING

By W. H. Gray,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas teachers of reading.

44
TOTAL NUMBER POINTS

Name [illegible] Town [illegible]
School [illegible] Age 13 Grade 8
Teacher [illegible] State Kansas Date [illegible]

DIRECTIONS: This is a test in Silent Reading. You will find a number of exercises like the sample below. Read these one at a time as rapidly as possible. After each exercise you will find a number of statements, or questions, on what you have read. For each of these statements there are several answers. Only one of these is correct. Decide which is the right answer and place the number before it in the parenthesis before the statement. If necessary, you may re-read a paragraph to find the correct answers.

Now read Example A.

Example A: Little John ran down the road. He had a reading book in one hand, a spelling book in the other, and a lunch-box under his right arm.

1. (3) What was the boy's name? 1. Roy. 2. William. 3. John. 4. Dick.

The correct answer to question No. 1 is "John" and this is answer No. 3. Hence a figure "3" has been placed in the parenthesis before the statement.

2. (2) The boy was going to : 1. church. 2. school. 3. a party. 4. a circus.

The correct answer to statement No. 2 is "school." Hence a "2" has been placed before that statement.

3. ( ) How did the boy travel? 1. on foot. 2. on horseback. 3. on skates. 4. by automobile. 5. by horse and buggy.

What is the correct answer to question No. 3? Write the correct number in the parenthesis before the question.

Now, when the signal to begin is given, read as many of the following paragraphs as possible and answer as many of the statements as you can. You will be allowed exactly fifteen minutes.

I.

Joe was very fond of riding to the mill with his father. One very hot day as we drove along the dusty road we saw a boy sitting on an old-fashioned rail fence.

1. (3) Joe liked to ride with his: 1. cousin. 2. dog. 3. father. 4. playmates. 5. mother.
2. (2) The time of year was: 1. spring. 2. summer. 3. autumn. 4. winter.
3. (1) The fence was made of: 1. wood. 2. stone. 3. wire. 4. cement. 5. rope.

II.

Once upon a time there was a farmer who had three sons. They were all idle fellows, and helped their father very little. One day the oldest son, named Peter, heard that the king wanted someone to take care of his rabbits.

4. (3) The three boys were: 1. faithful. 2. industrious. 3. lazy. 4. fat. 5. handsome.
5. (2) They lived in the: 1. palace. 2. country. 3. city. 4. village.
6. (3) The king needed a: 1. baker. 2. gardner. 3. caretaker. 4. hunter.

III.

The sun was getting high, and it was warm. Birds sang and flitted about in the alders along the shore. Beautiful dragon-flies darted about over the water like little airplanes. One big, handsome dragon-fly kept dipping her tail in the water every few seconds.

7. (3) The dragon-flies flew like: 1. robins. 2. locusts. 3. airplanes. 4. kites. 5. fairies.
8. (2) The time of day was: 1. early morning. 2. near noon. 3. late afternoon. 4. evening. 5. night.
9. (4) The big dragon-fly was: 1. blue. 2. green. 3. ugly. 4. beautiful. 5. quiet.

IV.

How to Feed the Snowbirds—The crumbs from our tables are feasts for them, and a dish of water is a grateful gift for dry little throats that can not find any that has not been frozen into solid ice. Scattering crumbs on the snow or the open ground is well enough, and you will be thanked for it; but it is much better to put it into a box on top of a post, where the little feasters will not be subject to the sudden attack of a sneaking cat.

10. (4) Birds should be given water in winter because: 1. they need a bath. 2. the ground is frozen. 3. water outside is too dirty. 4. they cannot find any.

11. (4) The best way to feed the birds is to put the crumbs: 1. on the snow. 2. on the open ground. 3. in a dish on the ground. 4. in a box on a post.

12. (2) Cats can catch birds more easily when the birds are: 1. on a post. 2. on the ground. 3. flying. 4. sitting in a tree.

V.

When Mary Anne finally came running out, however, they seemed to forget that she was different and to accept her as one of themselves. One or two stroked her dress with curious fingers, and then felt of their own scanty garments of tanned leather, as though wondering how there could be such a difference. Some bold ones even touched her bright soft hair so oddly unlike their rough black locks. But most of them seemed to waste little thought upon the strangeness of her white skin and her blue checked dress, but fell to teaching her how to play their games of ball or showing her their ponies, brown and black, pinto and dapple gray. The horses were grazing in a scattered herd all about the group of lodges for Gray Eagle's village, while it contained no very vast number of people, was very rich in Indian wealth, which is counted by the number of horses each family owns.

13. (4) Mary Anne was dressed in: 1. tanned leather garments. 2. a red calico dress. 3. homespun. 4. a blue checked dress. 5. a fur coat.

14. (1) She was taught to: 1. play ball. 2. ride horseback. 3. make bead ornaments. 4. jump the rope. 5. wear moccasins.

15. (3) The Indians were wealthy because they had: 1. much money. 2. good crops. 3. many horses. 4. herds of buffalo. 5. slaves.

VI.

In the early days of our country, the old stagecoach carried Uncle Sam's mail. The stagecoach, drawn by four mules, lumbered along at the rate of six miles per hour, travelling three thousand miles in about five hundred hours. Three thousand miles is about the distance from coast to coast across the United States. After railroads were built across the country, Uncle Sam sent his mail by railway trains. Fast trains steamed over the rails at the rate of thirty miles an hour, making the trip across the continent in about one hundred hours. After the world war, Uncle Sam began using the airplane to help carry the mail. Today airplanes fly overhead at the rate of one hundred miles per hour, crossing the country in thirty hours.

16. (4) The stage coach was used for carrying: 1. lumber. 2. machinery. 3. mules. 4. mail. 5. food.

17. (3) A stage coach traveled about: 1. nine miles per hour. 2. thirty miles per hour. 3. six miles per hour. 4. one hundred miles per hour. 5. twelve miles per hour.

18. (3) The airplane was used to carry mail: 1. before the World War. 2. during the World War. 3. after the World War.

VII.

Once upon a time, Boris saved a boy from drowning, and was praised and rewarded richly for his deed. Ever since, Boris goes mad with joy whenever he catches sight of a child in the water. He has a passion for life-saving, as some dogs have for getting sticks. No one is safe in swimming, with Boris about. The Newfoundland is huge and powerful. He dives in, fastens his teeth in his vicitm's bathing suit and drags his victim to shore. He does not stop at one "rescue." He cleans out the lake or swimming hole. He tears bathing suits and spoils all thought of fun in the water when he is about.

19. (5) Whom did Boris save? 1. girl. 2. lady. 3. pet. 4. dog. 5. boy.

20. (3) Boris rescues people by: 1. barking at them. 2. tearing their bathing suits. 3. dragging them to shore. 4. preventing them from entering the water.

21. (3) The Newfoundland is: 1. small and wiry. 2. afraid of cats. 3. large and strong. 4. very short-haired. 5. long and lanky.

VIII.

To test the value of marketing only perfect fruit and vegetables, I heaped one basket of tomatoes especially full, then added one tomato with a rotted spot in it at the top of the basket. I had 30 baskets of tomatoes on sale but the one with the rotted tomato remained until all the others were sold. Then I removed the spoiled tomato. That basket contained at least a dozen more good tomatoes than any of the others, yet the spoiled one offset them, proof enough that one spoiled vegetable, fruit, or egg will prevent the sale of at least a dozen of its kind.

22. (2) The tomato at the top of the basket had: 1. a very smooth skin. 2. a decayed spot. 3. deep grooves. 4. green spots. 5. a large stem.

23. (4) Baskets of tomatoes which sell readily are those which: 1. contain the most fruit. 2. have beautiful decorations. 3. have blemishes on the fruit. 4. have perfect fruit.

24. (1) The material tested was: 1. wheat. 2. iron ore. 3. sugar. 4. garden produce.

IX.

The breaking of the ice on the large northern rivers has some peculiar features. Quite suddenly, the ice sheet breaks into huge blocks obstructing the current. The water rises immediately. Blocked ice in all streams cuts away great pieces of the steeper banks, producing genuine excavations. Stretches of surface ground cave in, trees and all. River shores, from the upper currents down to the mouth, are covered with masses of floating ice drifted ashore.

25. (5) The ice breaks into: 1. tiny pieces. 2. ice-bergs. 3. cubes. 4. thin slices. 5. huge blocks.

26. (2) The banks are cut away by: 1. ice moving freely. 2. blocked ice. 3. fast flowing water. 4. ice freezing suddenly.

27. (1) What are the river banks covered with? 1. trees. 2. green grass. 3. drifting logs. 4. cakes of ice. 5. snow.

X.

The sense of time as we know it seems to be spared to animals. They have no fears of what the future may hold; they don't consciously think over the happy days of youth gone by. Only animals which hunt their prey have some conception of the very near future. When waiting for moving prey to reappear from behind some obstacle, they estimate at least a short time interval and hold themselves ready to spring when their victim again comes into sight.

28. (4) Which animals have a notion of the very near future? 1. those that eat grass. 2. those that live in the ground. 3. those raised by man. 4. those that kill other animals. 5. those that live in trees.

29. (3) Most of the lower animals: 1. fear the future. 2. have memories of the past. 3. have little conception of the future. 4. think continuously of tomorrow.

30. (4) When the prey disappears animals: 1. spring at once. 2. run away. 3. get very nervous. 4. get ready to spring when the prey reappears. 5. lie down and sleep.

XI.

Criminals and felons can be apprehended under certain circumstances by the imprint of their automobile tires. From a scientific study of the tire imprint and comparisons with marks on record in the sheriff's office, it is possible to determine the make and size of the tire, which wheel it is on, and the approximate type, load, and speed of the suspected car at the time the felony was committed. When suspicious-looking tire marks are discovered near the scene of a crime, a try-square is placed on the ground beside the marks, and measurements and photographs are taken. These data are compared with office records of the 450 different kinds of tire-tread patterns now in use. After determining the make, size, and position of the suspected tire, officers watch for cars having the distinguishing tire or tires.

31. (2) The imprint of automobile tires is: 1. no help in detecting crime. 2. valuable in detecting crime. 3. a hindrance in detecting crime. 4. an aid to the criminal.

32. (1) Tire imprints are examined by means of: 1. measurements. 2. a telescope. 3. a microscope. 4. just looking at them. 5. taking wax impressions.

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Evidences of what apparently represents a peculiar method used by aboriginal Americans in grinding corn or other materials are to be found in certain parts of Kentucky in the form of ancient mortars commonly known as "hominy-holes." They occur on the floor of rock shelters or in boulders at the entrance to such shelters in the cliff regions of the state, and consist of conical holes excavated in the rock and generally worn smooth and deep by long use. In or near such holes may usually be found the pestles which were evidently used for crushing or grinding the grain in the holes.

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April 4, 1930
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Kansas State Teachers College, Emporia

ARITHMETIC

By J. B. Stroud,
K. S. T. C., Emporia, Kansas.
with valuable assistance from Kansas arithmetic teachers.

	Score
Part I	8 9
Part II	0
Total	8 9

Name Aileen Joyce Elliott Age 8 Grade fourth

Town Lincoln State Kansas Date April 4, 1930

School Central Teacher M. M. Rushing

DIRECTIONS: Get the correct answer to as many examples as you can. Write the answers in the spaces left for them near each example. Make your answers stand out clearly.

PART I.

1. Add
   9
   4
   6
   19

2. 19 — 5 = 14

3. 7 × 8 = 54

4. 27 ÷ 9 = 4-5

5. 541
   × 2
   842

6. Subtract
   649
   427
   222

7. Divide
   2) 628
   314

8. Add
   753
   614
   432
   1799

9. Divide
   5) 915
   183

10. Subtract
    6925
    3874
    3151

11. Multiply
    741
    3
    2823

12. 2135 ÷ 7 = 35

13. Add
    4806
    391
    8743
    7625
    21565

14. Multiply
    538
    25
    2240
    1076
    13200

15. 700 ÷ 10 = 70

16. Divide
    45) 11700
    90
    270
    270
    0

17. 900 × 100 = 90000

18. Multiply
    875
    504
    371

19. 41) 1107

20. 170.6
    × 100

21. Add
    13½
    6
    5¼
    16¼

22. Subtract
    5010
    2635

23. ½ — ¼ =

24. ⅗ + ⅖ =

25. ⅗ × ½ =

26. ⅝ ÷ 5 =

27. 8⅜ — 3⅝ =

28. Add
    7⅕
    12¾
    3⅙

29. Divide
    .04) .648

30. Multiply
    5.44
    6.2

31. 24¾ ÷ 8¼ =

32. 8½ × 2½ =

33. 200 ÷ .622 =

34. 4⅜ × 2⅛ × 6⅞ =

35. Subtract
    4 yr. 3 mo. 20 da.
    2 yr. 6 mo. 10 da.

36. Add
    2 yd. 2 ft. 10 in.
    3 yd. 1 ft. 8 in.
    6 yd. 2 ft. 6 in.

37. Divide
    7) 40 lb. 6 oz.

38. 6896
    × 38⅞

39. 83.2 — 2.006 =

40. 0 × 832 =

PART II.

1. Frank sold 25 sheep and had 10 left. How many had he at first?

Ans. .....

2. George raised 3 prize pumpkins which weighed as follows: 14½ lbs., 13 lbs., and 16½ lbs. Find the average weight.

Ans. .....

3. To make a trapeze, we need a steel bar 4 ft. 6 in. long. Find the cost if one foot is worth 60 cents.

Ans. .....

4. On a map in Mary's geography two cities are 2 in. apart. What is the actual distance between the cities, if ¼ in. on the map represents 25 miles?

Ans. .....

5. George has 70 rabbits; he sold 18 of them, then bought 23. How many rabbits has he now?

Ans. .....

6. Robert and James deliver packages on Saturday. Robert worked for 1¼ hrs. for Cook and 1¼ hrs. for Brown. James worked at Smith's for 1¾ hrs. Which boy worked longer?

Ans. .....

7. Walter was paid 20 cts. an hour last summer for mowing lawns. If he earned $5.40, how many hours did he work?

Ans. .....

8. Coleman bought a $16.50 Boy Scout suit from his uncle who gave him a 35% discount. How much did the suit cost Coleman?

Ans. .....

9. John Smith borrowed $450 from Jack Jones at 6% per annum. How much did he owe Mr. Jones at the end of 1 year?

Ans. .....

10. Lucile has $8.25. How much more must she save in order to buy a $4.50 hat and a $15.00 coat?

Ans. .....

11. There are 1,223 pupils in our grade schools. If the total cost to maintain the school for one year is $46,877.59, what is the average cost per pupil?

Ans. .....

12. I borrowed $1,000 at 5½% for 1 yr. What was the cost for the use of this money?

Ans. .....

13. A suit of clothes was marked $45, which was 50% more than the cost. What was the cost?

Ans. .....

14. An orchard contained 120 apple trees. If 40% of all the orchard is in apples, how many trees are there in the orchard?

Ans. .....

15. At 3¼ percent what will be the fee for selling a shipment of goods valued at $1,008?

Ans. .....

16. A citizen owns property which is assessed at $5,860. The rate of tax is $2.50 per $100. What is his semi-annual tax?

Ans. .....

17. A bridge is 90 ft. long and 20 ft. wide. How many board feet of lumber will it take to lay a floor on it if the planks used are 2 in. thick?

Ans. .....

18. Mrs. Brown bought a bolt of curtain material containing 17 yards. How many curtains each containing 4½ yds. can she make from it?

Ans. .....

19. A box of 25 apples cost $2.75. How much was that for each apple?

Ans. .....

20. Frank and James took care of a lawn one summer for $9. Frank mowed it 6 times and James 12 times. How much money should Frank receive?

Ans. .....

21. Over how many sq. yd. can a horse graze if tied to a post by a rope 25 ft. long? (Let $\pi=3.14$.) Make no allowance for fastening the rope.

Ans. .....

22. How much will the excavation for a cellar 30 ft. by 40 ft. and 6 ft. deep cost at 40 cents per cu. yd.?

Ans. .....

23. How many rods of wire are needed to build a 5 wire fence around a piece of ground 20 rd. square?

Ans. .....

24. A farmer has a cylindrical silo which is 10 ft. in diameter and 25 feet high. How many cu. ft. will it hold? (Use $\pi=3.14$.)

Ans. .....

25. In an examination, Susie tried 32 examples. This was 80% of the whole examination. How many examples were there in the examination?

Ans. .....

26. Find the weight of an iron bar that is 4 in. wide, 3 in. thick and 60 ft. long, if 1 cu. ft. weighs 480 lbs.

Ans. .....

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	Score
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Name [illegible] Age 10 Grade [illegible]

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4. 27 ÷ 9 = 3

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   × 2

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   2) 628
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    6925
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13. Add
    4806
    391
    8743
    7625

    21565

14. Multiply
    538
    25

    2690
    1076

    13450

15. 700 ÷ 10 = 70

16. Divide
    45) 11700
    260

17. 900 × 100 = 9

18. Multiply
    875
    504

    371

19. 41) 1107
    82

    287

20. 170.6
    × 100

    17060

21. Add
    13½
    6
    5¼
    16¼

    41

22. Subtract
    5010
    2635

    2375

23. ½ — ¼ = ¼

24. ⅗ + ⅖ = 6/5

25. ⅗ × ½ = 3/10

26. ⅝ ÷ 5 = 7/8

27. 8⅜ — 3⅝ = 4 6/8

28. Add
    71/5
    12¾
    3⅙

    22516

29. Divide
    .04) .648
    16.2

30. Multiply
    5.44
    6.2

    10.88
    32.64

    33.728

31. 424¾ ÷ 8¼ = 53/4

32. 8½ × 2½ =

33. 200 ÷ .622 =

34. 4⅜ × 2⅛ × 6⅞ =

35. Subtract
    4 yr. 3 mo. 20 da.
    2 yr. 6 mo. 10 da.

36. Add
    2 yd. 2 ft. 10 in.
    3 yd. 1 ft. 8 in.
    6 yd. 2 ft. 6 in.

37. Divide
    7) 40 lb. 6 oz.

38. 6896
    × 387⅞

39. 83.2 — 2.006 =

40. 0 × 832 =

1/4 = 3/4 = 2

PART II.

1. Frank sold 25 sheep and had 10 left. How many had he at first?

Ans. 35

2. George raised 3 prize pumpkins which weighed as follows: 14½ lbs., 13 lbs., and 16½ lbs. Find the average weight.

Ans. 44 lb

3. To make a trapeze, we need a steel bar 4 ft. 6 in. long. Find the cost if one foot is worth 60 cents.

Ans. $2.70

4. On a map in Mary's geography two cities are 2 in. apart. What is the actual distance between the cities, if ¼ in. on the map represents 25 miles?

Ans. 200 mi

5. George has 70 rabbits; he sold 18 of them, then bought 23. How many rabbits has he now?

Ans. 84

6. Robert and James deliver packages on Saturday. Robert worked for 1¼ hrs. for Cook and 1¼ hrs. for Brown. James worked at Smith's for 1¾ hrs. Which boy worked longer?

Ans. Robert.

7. Walter was paid 20 cts. an hour last summer for mowing lawns. If he earned $5.40, how many hours did he work?

Ans. 27

8. Coleman bought a $16.50 Boy Scout suit from his uncle who gave him a 35% discount. How much did the suit cost Coleman?

Ans. $5.00 per suit

9. John Smith borrowed $450 from Jack Jones at 6% per annum. How much did he owe Mr. Jones at the end of 1 year?

Ans. $7.30

10. Lucile has $8.25. How much more must she save in order to buy a $4.50 hat and a $15.00 coat?

Ans. $11.35

11. There are 1,223 pupils in our grade schools. If the total cost to maintain the school for one year is $46,877.59, what is the average cost per pupil?

Ans. $38.32

12. I borrowed $1,000 at 5½% for 1 yr. What was the cost for the use of this money?

Ans. [illegible]

13. A suit of clothes was marked $45, which was 50% more than the cost. What was the cost?

Ans. $22.50

14. An orchard contained 120 apple trees. If 40% of all the orchard is in apples, how many trees are there in the orchard?

Ans. 300 trees

15. At 3¼ percent what will be the fee for selling a shipment of goods valued at $1,008?

Ans. $32.76

16. A citizen owns property which is assessed at $5,860. The rate of tax is $2.50 per $100. What is his semi-annual tax?

Ans. $7.32½ tax

17. A bridge is 90 ft. long and 20 ft. wide. How many board feet of lumber will it take to lay a floor on it if the planks used are 2 in. thick?

Ans.

18. Mrs. Brown bought a bolt of curtain material containing 17 yards. How many curtains each containing 4½ yds. can she make from it?

Ans. 4 curtains

19. A box of 25 apples cost $2.75. How much was that for each apple?

Ans. 11 cents apiece

20. Frank and James took care of a lawn one summer for $9. Frank mowed it 6 times and James 12 times. How much money should Frank receive?

Ans. $6.00

21. Over how many sq. yd. can a horse graze if tied to a post by a rope 25 ft. long? (Let $\pi=3.14$.) Make no allowance for fastening the rope.

Ans.

22. How much will the excavation for a cellar 30 ft. by 40 ft. and 6 ft. deep cost at 40 cents per cu. yd.?

Ans.

23. How many rods of wire are needed to build a 5 wire fence around a piece of ground 20 rd. square?

Ans.

24. A farmer has a cylindrical silo which is 10 ft. in diameter and 25 feet high. How many cu. ft. will it hold? (Use $\pi=3.14$.)

Ans.

25. In an examination, Susie tried 32 examples. This was 80% of the whole examination. How many examples were there in the examination?

Ans.

26. Find the weight of an iron bar that is 4 in. wide, 3 in. thick and 60 ft. long, if 1 cu. ft. weighs 480 lbs.

Ans.

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes for each part.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

ARITHMETIC

By J. B. Stroud,
K. S. T. C., Emporia, Kansas.
with valuable assistance from Kansas arithmetic teachers.

	Score
Part I	27
Part II	7
Total	34

Name Joann Reinking Age 10 Grade 6th

Town Lincoln State Kansas Date April 4

School Central Teacher Mrs. Rein Reinking

DIRECTIONS: Get the correct answer to as many examples as you can. Write the answers in the spaces left for them near each example. Make your answers stand out clearly.

PART I.

1. Add
   9
   4
   6

   19

2. 19 — 5 = 14

3. 7 × 8 = 56

4. 27 ÷ 9 = 9

5. 541
   × 2

   1082

6. Subtract
   649
   427

   222

7. Divide
   2) 628

   314

8. Add
   753
   614
   432

   1799

9. Divide
   5) 915

   183

10. Subtract
    6925
    3874

    3051

11. Multiply
    741
    3

    2223

12. 2135 ÷ 7 = 305

13. Add
    4806
    391
    8743
    7625

    21565

14. Multiply
    538
    25

    2690
    1076

    13450

15. 700 ÷ 10 = 70

16. Divide
    260
    45) 11700
    90

    270
    270

17. 900 × 100 = 90000

18. Multiply
    875
    504

    3500
    4375

    441000

19. Divide
    27
    41) 1107
    82

    287
    287

20. 170.6
    × 100

    17060.0

21. Add
    13½
    6
    5¼
    16¼

    41

22. Subtract
    5010
    2635

    2375

23. ½ — ¼ = ¼

24. ⅗ + ⅖ = 1

25. ⅗ × ½ =

26. ⅝ ÷ 5 = 1/16

27. 8⅜ — 3⅝ = 4¾

28. Add
    7⅕
    12¾
    3⅙

    23/30

29. Divide
    .04) .648

    16.2

30. Multiply
    5.44
    6.2

    1088
    3264

    33.728

31. 24¾ ÷ 8¼ = 3

32. 8½ × 2½ =

33. 200 ÷ .622 =

34. 4⅜ × 2⅛ × 6⅞ =

35. Subtract
    4 yr. 3 mo. 20 da.
    2 yr. 6 mo. 10 da.

36. Add
    2 yd. 2 ft. 10 in.
    3 yd. 1 ft. 8 in.
    6 yd. 2 ft. 6 in.

37. Divide
    7) 40 lb. 6 oz.

38. 6896
    × 38⅞

39. 83.2 — 2.006 =

40. 0 × 832 =

PART II.

1. Frank sold 25 sheep and had 10 left. How many had he at first?

Ans. 35 sheep

2. George raised 3 prize pumpkins which weighed as follows: 14½ lbs., 13 lbs., and 16½ lbs. Find the average weight.

Ans. 14 lbs.

3. To make a trapeze, we need a steel bar 4 ft. 6 in. long. Find the cost if one foot is worth 60 cents.

Ans. $2.46

4. On a map in Mary's geography two cities are 2 in. apart. What is the actual distance between the cities, if ¼ in. on the map represents 25 miles?

Ans. 200 miles

5. George has 70 rabbits; he sold 18 of them, then bought 23. How many rabbits has he now?

Ans. 75 rabbits

6. Robert and James deliver packages on Saturday. Robert worked for 1¼ hrs. for Cook and 1¼ hrs. for Brown. James worked at Smith's for 1¾ hrs. Which boy worked longer?

Ans. Robert

7. Walter was paid 20 cts. an hour last summer for mowing lawns. If he earned $5.40, how many hours did he work?

Ans. 27 hr.

8. Coleman bought a $16.50 Boy Scout suit from his uncle who gave him a 35% discount. How much did the suit cost Coleman?

Ans. $21.81

9. John Smith borrowed $450 from Jack Jones at 6% per annum. How much did he owe Mr. Jones at the end of 1 year?

Ans. $477.00

10. Lucile has $8.25. How much more must she save in order to buy a $4.50 hat and a $15.00 coat?

Ans. $11.25

11. There are 1,223 pupils in our grade schools. If the total cost to maintain the school for one year is $46,877.59, what is the average cost per pupil?

Ans. .....

12. I borrowed $1,000 at 5½% for 1 yr. What was the cost for the use of this money?

Ans. .....

13. A suit of clothes was marked $45, which was 50% more than the cost. What was the cost?

Ans. .....

14. An orchard contained 120 apple trees. If 40% of all the orchard is in apples, how many trees are there in the orchard?

Ans. .....

15. At 3¼ percent what will be the fee for selling a shipment of goods valued at $1,008?

Ans. .....

16. A citizen owns property which is assessed at $5,860. The rate of tax is $2.50 per $100. What is his semi-annual tax?

Ans. .....

17. A bridge is 90 ft. long and 20 ft. wide. How many board feet of lumber will it take to lay a floor on it if the planks used are 2 in. thick?

Ans. .....

18. Mrs. Brown bought a bolt of curtain material containing 17 yards. How many curtains each containing 4½ yds. can she make from it?

Ans. .....

19. A box of 25 apples cost $2.75. How much was that for each apple?

Ans. .....

20. Frank and James took care of a lawn one summer for $9. Frank mowed it 6 times and James 12 times. How much money should Frank receive?

Ans. .....

21. Over how many sq. yd. can a horse graze if tied to a post by a rope 25 ft. long? (Let $\pi=3.14$.) Make no allowance for fastening the rope.

Ans. .....

22. How much will the excavation for a cellar 30 ft. by 40 ft. and 6 ft. deep cost at 40 cents per cu. yd.?

Ans. .....

23. How many rods of wire are needed to build a 5 wire fence around a piece of ground 20 rd. square?

Ans. .....

24. A farmer has a cylindrical silo which is 10 ft. in diameter and 25 feet high. How many cu. ft. will it hold? (Use $\pi=3.14$.)

Ans. .....

25. In an examination, Susie tried 32 examples. This was 80% of the whole examination. How many examples were there in the examination?

Ans. .....

26. Find the weight of an iron bar that is 4 in. wide, 3 in. thick and 60 ft. long, if 1 cu. ft. weighs 480 lbs.

Ans. .....

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes for each part.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

ARITHMETIC

By J. B. Stroud,
K. S. T. C., Emporia, Kansas.
with valuable assistance from Kansas arithmetic teachers.

Score	
Part I	31
Part II	9
Total	40

Name Wilma Mason Age 13 years Grade 7th class A.

Town Lincoln State Kansas Date April 4th

School North Building Teacher Victor Murphy

DIRECTIONS: Get the correct answer to as many examples as you can. Write the answers in the spaces left for them near each example. Make your answers stand out clearly.

PART I.

1. Add 9, 4, 6 — 19
2. 19 — 5 = 14
3. 7 × 8 = 56
4. 27 ÷ 9 = 3
5. 541 × 2 — 1,082
6. Subtract 649 − 427 — 222
7. Divide 2) 628 — 314
8. Add 753, 614, 432 — 1,799
9. Divide 5) 915 — 183
10. Subtract 6925 − 3874 — 3051
11. Multiply 741 × 3 — 2,223
12. 2135 ÷ 7 = 305
13. Add 4806, 391, 8743, 7625 — 21,565
14. Multiply 538 × 25 — 2690, 1076, 13,450
15. 700 ÷ 10 = 70
16. Divide 45) 11700 — 260
17. 900 × 100 = 90,000
18. Multiply 875 × 504 — 3500, 000, 4375, 441,000
19. 41) 1107 — 27
20. 170.6 × 100 — 0000, 0000, 1706, 17,060.6
21. Add 13½, 6, 5¼, 16¼ — 41
22. Subtract 5010 − 2635 — 2,375
23. ½ — ¼ = ¼
24. ⅗ + ⅖ = 5/5 or 1
25. ⅗ × ½ = 3/10
26. ⅝ ÷ 5 = ⅛
27. 8⅜ — 3⅝ = 4 3/4
28. Add 7⅕, 12¾, 3⅙ — 22⅕
29. Divide .04) .648 — 8.2
30. Multiply 5.44 × 6.2 — 1088, 3264, 33.728
31. 24¾ ÷ 8¼ = 16½
32. 8½ × 2½ = 21¼
33. 200 ÷ .622 = .32 48/311
34. 4⅜ × 2⅛ × 6⅞ = 74 337/512
35. Subtract 4 yr. 3 mo. 20 da. − 2 yr. 6 mo. 10 da. — 1 yr. 9 mo. 10 da.
36. Add 2 yd. 2 ft. 10 in., 3 yd. 1 ft. 8 in., 6 yd. 2 ft. 6 in. — 13 yd. 0 ft. 2 in.
37. Divide 7) 40 lb. 6 oz.
38. 6896 × 38⅞ — 55168, 20688, 262048, 6034 ans 268,082
39. 83.2 — 2.006 = 81.6
40. 0 × 832 = 832

PART II.

1. Frank sold 25 sheep and had 10 left. How many had he at first?

Ans. 35

2. George raised 3 prize pumpkins which weighed as follows: 14½ lbs., 13 lbs., and 16½ lbs. Find the average weight.

Ans. 14 2/3 lbs.

3. To make a trapeze, we need a steel bar 4 ft. 6 in. long. Find the cost if one foot is worth 60 cents.

Ans. $2.70

4. On a map in Mary's geography two cities are 2 in. apart. What is the actual distance between the cities, if ¼ in. on the map represents 25 miles?

Ans. 200 miles

5. George has 70 rabbits; he sold 18 of them, then bought 23. How many rabbits has he now?

Ans. 75

6. Robert and James deliver packages on Saturday. Robert worked for 1¼ hrs. for Cook and 1¼ hrs. for Brown. James worked at Smith's for 1¾ hrs. Which boy worked longer?

Ans. Robert

7. Walter was paid 20 cts. an hour last summer for mowing lawns. If he earned $5.40, how many hours did he work?

Ans. 27 hrs.

8. Coleman bought a $16.50 Boy Scout suit from his uncle who gave him a 35% discount. How much did the suit cost Coleman?

Ans. $10.22

9. John Smith borrowed $450 from Jack Jones at 6% per annum. How much did he owe Mr. Jones at the end of 1 year?

Ans. $477

10. Lucile has $8.25. How much more must she save in order to buy a $4.50 hat and a $15.00 coat?

Ans. $11.25

11. There are 1,223 pupils in our grade schools. If the total cost to maintain the school for one year is $46,877.59, what is the average cost per pupil?

Ans. $38.33

12. I borrowed $1,000 at 5½% for 1 yr. What was the cost for the use of this money?

Ans. $55.00

13. A suit of clothes was marked $45, which was 50% more than the cost. What was the cost?

Ans. $22.50

14. An orchard contained 120 apple trees. If 40% of all the orchard is in apples, how many trees are there in the orchard?

Ans. 168

15. At 3¼ percent what will be the fee for selling a shipment of goods valued at $1,008?

Ans. $378

16. A citizen owns property which is assessed at $5,860. The rate of tax is $2.50 per $100. What is his semi-annual tax?

Ans. $146.50

17. A bridge is 90 ft. long and 20 ft. wide. How many board feet of lumber will it take to lay a floor on it if the planks used are 2 in. thick?

Ans.

18. Mrs. Brown bought a bolt of curtain material containing 17 yards. How many curtains each containing 4½ yds. can she make from it?

Ans.

19. A box of 25 apples cost $2.75. How much was that for each apple?

Ans.

20. Frank and James took care of a lawn one summer for $9. Frank mowed it 6 times and James 12 times. How much money should Frank receive?

Ans.

21. Over how many sq. yd. can a horse graze if tied to a post by a rope 25 ft. long? (Let π=3.14.) Make no allowance for fastening the rope.

Ans.

22. How much will the excavation for a cellar 30 ft. by 40 ft. and 6 ft. deep cost at 40 cents per cu. yd.?

Ans.

23. How many rods of wire are needed to build a 5 wire fence around a piece of ground 20 rd. square?

Ans.

24. A farmer has a cylindrical silo which is 10 ft. in diameter and 25 feet high. How many cu. ft. will it hold? (Use π=3.14.)

Ans.

25. In an examination, Susie tried 32 examples. This was 80% of the whole examination. How many examples were there in the examination?

Ans.

26. Find the weight of an iron bar that is 4 in. wide, 3 in. thick and 60 ft. long, if 1 cu. ft. weighs 480 lbs.

Ans.

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes for each part.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

ARITHMETIC

By J. B. Stroud,
K. S. T. C., Emporia, Kansas.
with valuable assistance from Kansas arithmetic teachers.

	Score
Part I	32
Part II	16
Total	47

Name Lola Shaw Age 14 Grade 8th

Town Lincoln State Kansas Date Apr. 4, 1930

School Lincoln Jun. Hy. Teacher Mrs. Mary Shay

DIRECTIONS: Get the correct answer to as many examples as you can. Write the answers in the spaces left for them near each example. Make your answers stand out clearly.

PART I.

1. Add
   9
   4
   6
   19

2. 19 — 5 = 14

3. 7 × 8 = 56

4. 27 ÷ 9 = 3

5. 541
   × 2
   1082

6. Subtract
   649
   427
   222

7. Divide
   2) 628
   314

8. Add
   753
   614
   432
   1799

9. Divide
   5) 915
   183

10. Subtract
    6925
    3874
    3051

11. Multiply
    741
    3
    2223

12. 2135 ÷ 7 = 305

13. Add
    4806
    391
    8743
    7625
    21565

14. Multiply
    538
    25
    2690
    1076
    13450

15. 3700 ÷ 10 = 70

16. Divide
    260
    45) 11700

17. 900 × 100 = 90000

18. Multiply
    875
    504
    3500
    4375
    441000

19. 41) 1107 27

20. 170.6
    × 100
    17060.0

21. Add
    13½
    6
    5¼
    16¼
    40 = 41

22. Subtract
    5010
    2635
    2375

23. ½ — ¼ = ¼

24. ⅗ + ⅖ = 5/5

25. ⅗ × ½ = 3/10

26. ⅝ ÷ 5 = 1/8

27. 8⅜ — 3⅝ = 4 6/8

28. Add
    7⅕
    12¾
    3⅙
    22 17/30

29. Divide
    .04) .648
    16.2

30. Multiply
    5.44
    6.2
    1088
    3264
    33.728

31. 34¾ ÷ 8¼ = 3

32. 8½ × 2½ = 21 1/5

33. 200 ÷ .622 = 372

34. 4⅜ × 2⅛ × 6⅞ = 50 5/8

35. Subtract
    4 yr. 3 mo. 20 da.
    2 yr. 6 mo. 10 da.
    6 yr. 9 mo. 30 da.

36. Add
    2 yd. 2 ft. 10 in.
    3 yd. 1 ft. 8 in.
    6 yd. 2 ft. 6 in.
    11 yd. 5 ft. 24 in.

37. Divide
    5 5/7 lb. 6/7 oz.
    7) 40 lb. 6 oz.

38. 6896
    × 3⅞
    55168
    20688
    26901 0

39. 83.2 — 2.006 = 81.194

40. 0 × 832 = 832

PART II.

1. Frank sold 25 sheep and had 10 left. How many had he at first?

Ans. 35

2. George raised 3 prize pumpkins which weighed as follows: 14½ lbs., 13 lbs., and 16½ lbs. Find the average weight.

Ans. 14 2/3 lbs.

3. To make a trapeze, we need a steel bar 4 ft. 6 in. long. Find the cost if one foot is worth 60 cents.

Ans. $2.70

4. On a map in Mary's geography two cities are 2 in. apart. What is the actual distance between the cities, if ¼ in. on the map represents 25 miles?

Ans. 200

5. George has 70 rabbits; he sold 18 of them, then bought 23. How many rabbits has he now?

Ans. 75

6. Robert and James deliver packages on Saturday. Robert worked for 1¼ hrs. for Cook and 1¼ hrs. for Brown. James worked at Smith's for 1¾ hrs. Which boy worked longer?

Ans. Robert (1/4 hr. longer)

7. Walter was paid 20 cts. an hour last summer for mowing lawns. If he earned $5.40, how many hours did he work?

Ans. 52

8. Coleman bought a $16.50 Boy Scout suit from his uncle who gave him a 35% discount. How much did the suit cost Coleman?

Ans. $10.72

9. John Smith borrowed $450 from Jack Jones at 6% per annum. How much did he owe Mr. Jones at the end of 1 year?

Ans. $27.00

10. Lucile has $8.25. How much more must she save in order to buy a $4.50 hat and a $15.00 coat?

Ans. $11.25

11. There are 1,223 pupils in our grade schools. If the total cost to maintain the school for one year is $46,877.59, what is the average cost per pupil?

Ans. $38.33

12. I borrowed $1,000 at 5½% for 1 yr. What was the cost for the use of this money?

Ans. $55.00

13. A suit of clothes was marked $45, which was 50% more than the cost. What was the cost?

Ans. 22.50

14. An orchard contained 120 apple trees. If 40% of all the orchard is in apples, how many trees are there in the orchard?

Ans. 300

15. At 3¼ percent what will be the fee for selling a shipment of goods valued at $1,008?

Ans. $32.76

16. A citizen owns property which is assessed at $5,860. The rate of tax is $2.50 per $100. What is his semi-annual tax?

Ans. $148.50

17. A bridge is 90 ft. long and 20 ft. wide. How many board feet of lumber will it take to lay a floor on it if the planks used are 2 in. thick?

Ans.

18. Mrs. Brown bought a bolt of curtain material containing 17 yards. How many curtains each containing 4½ yds. can she make from it?

Ans. 3 7/9

19. A box of 25 apples cost $2.75. How much was that for each apple?

Ans. 11¢

20. Frank and James took care of a lawn one summer for $9. Frank mowed it 6 times and James 12 times. How much money should Frank receive?

Ans. $3.00

21. Over how many sq. yd. can a horse graze if tied to a post by a rope 25 ft. long? (Let $\pi=3.14$.) Make no allowance for fastening the rope.

Ans.

22. How much will the excavation for a cellar 30 ft. by 40 ft. and 6 ft. deep cost at 40 cents per cu. yd.?

Ans.

23. How many rods of wire are needed to build a 5 wire fence around a piece of ground 20 rd. square?

Ans.

24. A farmer has a cylindrical silo which is 10 ft. in diameter and 25 feet high. How many cu. ft. will it hold? (Use $\pi=3.14$.)

Ans.

25. In an examination, Susie tried 32 examples. This was 80% of the whole examination. How many examples were there in the examination?

Ans. 40

26. Find the weight of an iron bar that is 4 in. wide, 3 in. thick and 60 ft. long, if 1 cu. ft. weighs 480 lbs.

Ans.

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

SPELLING

By W. H. Gray,
K. S. T. C., Emporia, Kansas.

24
TOTAL NUMBER POINTS

Name Lee Squire Town Lincoln

School Central Age 10 Grade 4

Teacher Miss Hackman State Kansas Date April 4 1930

DIRECTIONS: In each row across the page you will find four spellings of the same word. Only one of these is correct. Find the correct one and place the number before this word in the parenthesis at the left.

Example: (2) 1. gril 2. girl 3. gurl 4. girll

In this example the second word is the one spelled correctly. Hence the figure "2" has been placed in the parenthesis. Do all of the rows the same way. You will have exactly 15 minutes.

(1)	1. 1 several	2 severl	3 severel	4 sevral
(2)	2. 1 seperate	2 separate	3 seprate	4 seperrate
(1)	3. 1 enuf	2 enough	3 enought	4 enofe
(1)	4. 1 sissors	2 sissers	3 sisers	4 scissors
(4)	5. 1 sirpluse	2 serplus	3 sirplus	4 surplus
(1)	6. 1 library	2 libery	3 libray	4 libary
(3)	7. 1 lettas	2 lettuce	3 lettus	4 lettes
(3)	8. 1 gipsy	2 gypsy	3 gipsey	4 jipsy
(4)	9. 1 gose	2 gauze	3 gause	4 goze
(2)	10. 1 electric	2 electrict	3 electrick	4 eletric
(4)	11. 1 funnyest	2 funnest	3 funest	4 funniest
(1)	12. 1 enginear	2 engineer	3 enginer	4 enginere
(1)	13. 1 magazine	2 magzine	3 magazen	4 magizene
(1)	14. 1 develp	2 develope	3 develup	4 develop
(2)	15. 1 estimate	2 estmate	3 estamate	4 estemate
(3)	16. 1 biscuit	2 bisket	3 biscut	4 biskut
(1)	17. 1 beleave	2 believe	3 belive	4 beleve
(3)	18. 1 certen	2 surten	3 certain	4 sertan
(4)	19. 1 appitite	2 apatite	3 apitite	4 appetite
(3)	20. 1 telegram	2 telagram	3 tellagram	4 tellgram
(2)	21. 1 cabbeg	2 cabage	3 cabbage	4 cabbige
(2)	22. 1 bilding	2 building	3 bulding	4 biulding
(2)	23. 1 autum	2 autumn	3 autom	4 auttum
(2)	24. 1 menchen	2 menchin	3 mention	4 menshion
(3)	25. 1 ake	2 ache	3 acke	4 ach
(1)	26. 1 balloon	2 bloon	3 ballon	4 bollon
(4)	27. 1 complete	2 compleat	3 complet	4 comeplet
(2)	28. 1 pumpkin	2 punkin	3 pumkin	4 punken
(3)	29. 1 dominos	2 dominoes	3 domanoes	4 domonoes
(4)	30. 1 mollasses	2 molaces	3 molases	4 molasses
(2)	31. 1 decendent	2 descendant	3 desendent	4 decendant
(3)	32. 1 decorate	2 decrate	3 deckorate	4 decarate
(4)	33. 1 sertenly	2 certainly	3 certenly	4 certanly

( ) 34. 1 manafacturing 2 manufactering 3 manufactoring 4 manufacturing
( ) 35. 1 cemetery 2 cemetary 3 cematary 4 sematary

( ) 36. 1 sufishent 2 sufficent 3 safishent 4 sufficient
( ) 37. 1 califlower 2 colaflower 3 cauliflower 4 calaflower
( ) 38. 1 govenor 2 governor 3 govener 4 governer
( ) 39. 1 artifishel 2 artfishel 3 artifical 4 artificial
( ) 40. 1 accommodate 2 acomodate 3 acomadate 4 accomodate

( ) 41. 1 generaly 2 generally 3 generly 4 genarly
( ) 42. 1 foriegn 2 forn 3 foren 4 foreign
( ) 43. 1 faucet 2 foset 3 fosit 4 fosset
( ) 44. 1 praire 2 prairie 3 prarie 4 prairy
( ) 45. 1 experence 2 experince 3 experiance 4 experience

( ) 46. 1 plumer 2 plummer 3 plumber 4 plomer
( ) 47. 1 eraser 2 eracer 3 earser 4 ereaser
( ) 48. 1 assocation 2 association 3 assoation 4 accoation
( ) 49. 1 incourage 2 encourge 3 incurage 4 encourage
( ) 50. 1 millinery 2 millenery 3 millenary 4 millanary

( ) 51. 1 furlow 2 furlough 3 furlo 4 ferlow
( ) 52. 1 disagreeble 2 disgreeable 3 disagreeable 4 disagreable
( ) 53. 1 bachler 2 bachelor 3 batchler 4 bachlor
( ) 54. 1 hickry 2 hicory 3 hickery 4 hickory
( ) 55. 1 counterfit 2 counterfeit 3 conterfit 4 counterfite

( ) 56. 1 acquainted 2 aquainted 3 aquanted 4 aqquainted
( ) 57. 1 oppisite 2 opposit 3 opposite 4 oppisit
( ) 58. 1 barracks 2 barricks 3 barraks 4 barax
( ) 59. 1 exticy 2 ecstasy 3 extecy 4 extisy
( ) 60. 1 mohogany 2 mohogony 3 mahogony 4 mahogany

( ) 61. 1 discernable 2 disearnable 3 discernible 4 desernable
( ) 62. 1 cresent 2 crescent 3 cressent 4 cresant
( ) 63. 1 poultice 2 poltis 3 poltus 4 poltice
( ) 64. 1 garantee 2 garentee 3 gaurantee 4 guarantee
( ) 65. 1 demention 2 dimention 3 dimension 2 demension

( ) 66. 1 disappointment 2 dissapointment 3 disapointment 4 dissappointment
( ) 67. 1 apologise 2 apologize 3 appologize 4 apoligize
( ) 68. 1 tortoise 2 tortus 3 tortise 4 tortis
( ) 69. 1 privilege 2 privilage 3 priviledge 4 privelage
( ) 70. 1 insesent 2 incessent 3 insessent 4 incessant

( ) 71. 1 termanal 2 termenal 3 terminal 4 termanel
( ) 72. 1 confedercy 2 confederacy 3 confedersy 4 confedericy
( ) 73. 1 varieties 2 varities 3 verities 4 varietys
( ) 74. 1 slauter 2 slotter 3 slaughter 4 sloter
( ) 75. 1 seperator 2 separator 3 seperater 4 separater

( ) 76. 1 rediculous 2 rediculas 3 rediculious 4 ridiculous
( ) 77. 1 sive 2 seive 3 sieve 4 scive
( ) 78. 1 luxuriant 2 luxurant 3 luxurent 4 luxurient
( ) 79. 1 pnemonia 2 pneumonia 3 newmonia 4 pnewmonia
( ) 80. 1 malicous 2 molicious 3 malicious 4 mulishes

( ) 81. 1 crystalize 2 cristalize 3 cristlize 4 christlize
( ) 82. 1 comittee 2 commity 3 committe 4 committee
( ) 83. 1 amateur 2 amature 3 amiture 4 ameture
( ) 84. 1 bargin 2 bargain 3 bargan 4 bargian

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

SPELLING

By W. H. Gray,
K. S. T. C., Emporia, Kansas.

46
TOTAL NUMBER POINTS

Name Orland Howard Town Lincoln

School Central Age 11 Grade 5

Teacher Miss Hickman State Kansas Date April 4

DIRECTIONS: In each row across the page you will find four spellings of the same word. Only one of these is correct. Find the correct one and place the number before this word in the parenthesis at the left.

Example: (2) 1. gril 2. girl 3. gurl 4. girll

In this example the second word is the one spelled correctly. Hence the figure "2" has been placed in the parenthesis. Do all of the rows the same way. You will have exactly 15 minutes.

(1)	1. 1 several	2 severl	3 severel	4 sevral
(2)	2. 1 seperate	2 separate	3 seprate	4 seperrate
(2)	3. 1 enuf	2 enough	3 enought	4 enofe
(4)	4. 1 sissors	2 sissers	3 sisers	4 scissors
(4)	5. 1 sirpluse	2 serplus	3 sirplus	4 surplus
(2)	6. 1 library	2 libery	3 libray	4 libary
(2)	7. 1 lettas	2 lettuce	3 lettus	4 lettes
(2)	8. 1 gipsy	2 gypsy	3 gipsey	4 jipsy
(3)	9. 1 gose	2 gauze	3 gause	4 goze
(1)	10. 1 electric	2 electrict	3 electrick	4 eletric
(1)	11. 1 funnyest	2 funnest	3 funest	4 funniest
(2)	12. 1 enginear	2 engineer	3 enginer	4 enginere
(1)	13. 1 magazine	2 magzine	3 magazen	4 magizene
(2)	14. 1 develp	2 develope	3 develup	4 develop
(1)	15. 1 estimate	2 estmate	3 estamate	4 estemate
(1)	16. 1 biscuit	2 bisket	3 biscut	4 biskut
(2)	17. 1 beleave	2 believe	3 belive	4 beleve
(3)	18. 1 certen	2 surten	3 certain	4 sertan
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(1)	32. 1 decorate	2 decrate	3 deckorate	4 decarate
(2)	33. 1 sertenly	2 certainly	3 certenly	4 certanly

(3)	34.	1	manafacturing	2	manufactering	3	manufactoring	4 manufacturing
(4)	35.	1	cemetery	2	cemetary	3	cematary	4 sematary
(4)	36.	1	sufishent	2	sufficent	3	safishent	4 sufficient
(3)	37.	1	califlower	2	colaflower	3	cauliflower	4 calaflower
(2)	38.	1	govenor	2	governor	3	govener	4 governer
(4)	39.	1	artifishel	2	artfishel	3	artifical	4 artificial
(4)	40.	1	accommodate	2	acomodate	3	acomadate	4 accomodate
(2)	41.	1	generaly	2	generally	3	generly	4 genarly
(1)	42.	1	foriegn	2	forn	3	foren	4 foreign
(4)	43.	1	faucet	2	foset	3	fosit	4 fosset
(2)	44.	1	praire	2	prairie	3	prarie	4 prairy
(1)	45.	1	experence	2	experince	3	experiance	4 experience
(2)	46.	1	plumer	2	plummer	3	plumber	4 plomer
(4)	47.	1	eraser	2	eracer	3	earser	4 ereaser
(1)	48.	1	assocation	2	association	3	assoation	4 accoation
(4)	49.	1	incourage	2	encourge	3	incurage	4 encourage
(4)	50.	1	millinery	2	millenery	3	millenary	4 millanary
(1)	51.	1	furlow	2	furlough	3	furlo	4 ferlow
(4)	52.	1	disagreeble	2	disgreeable	3	disagreeable	4 disagreable
(3)	53.	1	bachler	2	bachelor	3	batchler	4 bachlor
(4)	54.	1	hickry	2	hicory	3	hickery	4 hickory
(1)	55.	1	counterfit	2	counterfeit	3	conterfit	4 counterfite
(2)	56.	1	acquainted	2	aquainted	3	aquanted	4 aqquainted
(1)	57.	1	oppisite	2	opposit	3	opposite	4 oppisit
(1)	58.	1	barracks	2	barricks	3	barraks	4 barax
(1)	59.	1	extícy	2	ecstasy	3	extecy	4 extisy
(4)	60.	1	mohogany	2	mohogony	3	mahogony	4 mahogany
(1)	61.	1	discernable	2	disearnable	3	discernible	4 desernable
(2)	62.	1	cresent	2	crescent	3	cressent	4 cresant
(1)	63.	1	poultice	2	poltis	3	poltus	4 poltice
(4)	64.	1	garantee	2	garentee	3	gaurantee	4 guarantee
(1)	65.	1	demention	2	dimention	3	dimension	2 demension
(1)	66.	1	disappointment	2	dissapointment	3	disapointment	4 dissappointment
(2)	67.	1	apologise	2	apologize	3	appologize	4 apoligize
(1)	68.	1	tortoise	2	tortus	3	tortise	4 tortis
(3)	69.	1	privilege	2	privilage	3	priviledge	4 privelage
(4)	70.	1	insesent	2	incessent	3	insessent	4 incessant
( )	71.	1	termanal	2	termenal	3	terminal	4 termanel
( )	72.	1	confedercy	2	confederacy	3	confedersy	4 confedericy
( )	73.	1	varieties	2	varities	3	verities	4 varietys
( )	74.	1	slauter	2	slotter	3	slaughter	4 sloter
( )	75.	1	seperator	2	separator	3	seperater	4 separater
( )	76.	1	rediculous	2	rediculas	3	rediculious	4 ridiculous
( )	77.	1	sive	2	seive	3	sieve	4 scive
( )	78.	1	luxuriant	2	luxurant	3	luxurent	4 luxurient
( )	79.	1	pnemonia	2	pneumonia	3	newmonia	4 pnewmonia
( )	80.	1	malicous	2	molicious	3	malicious	4 mulishes
( )	81.	1	crystalize	2	cristalize	3	cristlize	4 christlize
( )	82.	1	comittee	2	commity	3	committe	4 committee
( )	83.	1	amateur	2	amature	3	amiture	4 ameture
( )	84.	1	bargin	2	bargain	3	bargan	4 bargian

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

SPELLING

By W. H. Gray,
K. S. T. C., Emporia, Kansas.

62
TOTAL NUMBER POINTS

Name Lenora Howard Town Lincoln

School Central Age 14 Grade 6th

Teacher Miss Hickman State Kansas Date April 4, 1930

DIRECTIONS: In each row across the page you will find four spellings of the same word. Only one of these is correct. Find the correct one and place the number before this word in the parenthesis at the left.

Example: (2) 1. gril 2. girl 3. gurl 4. girll

In this example the second word is the one spelled correctly. Hence the figure "2" has been placed in the parenthesis. Do all of the rows the same way. You will have exactly 15 minutes.

(1)	1. 1 several	2 severl	3 severel	4 sevral
(2)	2. 1 seperate	2 separate	3 seprate	4 seperrate
(2)	3. 1 enuf	2 enough	3 enought	4 enofe
(2)	4. 1 sissors	2 sissers	3 sisers	4 scissors
(2)	5. 1 sirpluse	2 serplus	3 sirplus	4 surplus
(1)	6. 1 library	2 libery	3 libray	4 libary
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(2)	8. 1 gipsy	2 gypsy	3 gipsey	4 jipsy
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(4)	31. 1 decendent	2 descendant	3 desendent	4 decendant
(1)	32. 1 decorate	2 decrate	3 deckorate	4 decarate
(2)	33. 1 sertenly	2 certainly	3 certenly	4 certanly

(4)	34. 1	manafacturing	2 manufactering	3 manufactoring	4 manufacturing
(1)	35. 1	cemetery	2 cemetary	3 cematary	4 sematary
(4)	36. 1	sufishent	2 sufficent	3 safishent	4 sufficient
(3)	37. 1	califlower	2 colaflower	3 cauliflower	4 calaflower
(2)	38. 1	govenor	2 governor	3 govener	4 governer
(4)	39. 1	artifishel	2 artfishel	3 artifical	4 artificial
(4)	40. 1	accommodate	2 acomodate	3 acomadate	4 accomodate
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(4)	42. 1	foriegn	2 forn	3 foren	4 foreign
(1)	43. 1	faucet	2 foset	3 fosit	4 fosset
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(4)	45. 1	experence	2 experince	3 experiance	4 experience
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(1)	47. 1	eraser	2 eracer	3 earser	4 ereaser
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(3)	52. 1	disagreeble	2 disgreeable	3 disagreeable	4 disagreable
(2)	53. 1	bachler	2 bachelor	3 batchler	4 bachlor
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( )	76. 1	rediculous	2 rediculas	3 rediculious	4 ridiculous
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Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930

Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

SPELLING

By W. H. Gray,
K. S. T. C., Emporia, Kansas.

30
TOTAL NUMBER POINTS

Name [illegible] Town Lincoln

School Lincoln Junior High Age 15 Grade 7

Teacher [illegible] State Kansas Date April 4 1930

DIRECTIONS: In each row across the page you will find four spellings of the same word. Only one of these is correct. Find the correct one and place the number before this word in the parenthesis at the left.

Example: (2) 1. gril 2. girl 3. gurl 4. girll

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(1)	1.	1 several	2 severl	3 severel	4 sevral
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([illegible])	4.	1 sissors	2 sissers	3 sisers	4 scissors
(4)	5.	1 sirpluse	2 serplus	3 sirplus	4 surplus
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63.	1	poultice	2	poltis	3	poltus	4 poltice
64.	1	garantee	2	garentee	3	gaurantee	4 guarantee
65.	1	demention	2	dimention	3	dimension	2 demension
66.	1	disappointment	2	dissapointment	3	disapointment	4 dissappointment
67.	1	apologise	2	apologize	3	appologize	4 apoligize
68.	1	tortoise	2	tortus	3	tortise	4 tortis
69.	1	privilege	2	privilage	3	priviledge	4 privelage
70.	1	insesent	2	incessent	3	insessent	4 incessant
71.	1	termanal	2	termenal	3	terminal	4 termanel
72.	1	confedercy	2	confederacy	3	confedersy	4 confedericy
73.	1	varieties	2	varities	3	verities	4 varietys
74.	1	slauter	2	slotter	3	slaughter	4 sloter
75.	1	seperator	2	separator	3	seperater	4 separater
76.	1	rediculous	2	rediculas	3	rediculious	4 ridiculous
77.	1	sive	2	seive	3	sieve	4 scive
78.	1	luxuriant	2	luxurant	3	luxurent	4 luxurient
79.	1	pnemonia	2	pneumonia	3	newmonia	4 pnewmonia
80.	1	malicous	2	molicious	3	malicious	4 mulishes
81.	1	crystalize	2	cristalize	3	cristlize	4 christlize
82.	1	comittee	2	commity	3	committe	4 committee
83.	1	amateur	2	amature	3	amiture	4 ameture
84.	1	bargin	2	bargain	3	bargan	4 bargian

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

SPELLING

By W. H. Gray,
K. S. T. C., Emporia, Kansas.

76
TOTAL NUMBER POINTS

Name Pauline Pinnick Town Lincoln
School Lincoln Jr. Hi Age 14 Grade 8
Teacher Miss Ross State Kansas Date April 4 1930

DIRECTIONS: In each row across the page you will find four spellings of the same word. Only one of these is correct. Find the correct one and place the number before this word in the parenthesis at the left.

Example: (2) 1. gril 2. girl 3. gurl 4. girll

In this example the second word is the one spelled correctly. Hence the figure "2" has been placed in the parenthesis. Do all of the rows the same way. You will have exactly 15 minutes.

(1)	1.	1 several	2 severl	3 severel	4 sevral
(2)	2.	1 seperate	2 separate	3 seprate	4 seperrate
(2)	3.	1 enuf	2 enough	3 enought	4 enofe
(4)	4.	1 sissors	2 sissers	3 sisers	4 scissors
(4)	5.	1 sirpluse	2 serplus	3 sirplus	4 surplus
(1)	6.	1 library	2 libery	3 libray	4 libary
(2)	7.	1 lettas	2 lettuce	3 lettus	4 lettes
(2)	8.	1 gipsy	2 gypsy	3 gipsey	4 jipsy
(2)	9.	1 gose	2 gauze	3 gause	4 goze
(1)	10.	1 electric	2 electrict	3 electrick	4 eletric
(4)	11.	1 funnyest	2 funnest	3 funest	4 funniest
(2)	12.	1 enginear	2 engineer	3 enginer	4 enginere
(1)	13.	1 magazine	2 magzine	3 magazen	4 magizene
(4)	14.	1 develp	2 develope	3 develup	4 develop
(1)	15.	1 estimate	2 estmate	3 estamate	4 estemate
(1)	16.	1 biscuit	2 bisket	3 biscut	4 biskut
(2)	17.	1 beleave	2 believe	3 belive	4 beleve
(3)	18.	1 certen	2 surten	3 certain	4 sertan
(4)	19.	1 appitite	2 apatite	3 apitite	4 appetite
(1)	20.	1 telegram	2 telagram	3 tellagram	4 tellgram
(3)	21.	1 cabbeg	2 cabage	3 cabbage	4 cabbige
(2)	22.	1 bilding	2 building	3 bulding	4 biulding
(2)	23.	1 autum	2 autumn	3 autom	4 auttum
(3)	24.	1 menchen	2 menchin	3 mention	4 menshion
(2)	25.	1 ake	2 ache	3 acke	4 ach
(1)	26.	1 balloon	2 bloon	3 ballon	4 bollon
(1)	27.	1 complete	2 compleat	3 complet	4 comeplet
(1)	28.	1 pumpkin	2 punkin	3 pumkin	4 punken
([illegible])	29.	1 dominos	2 dominoes	3 domanoes	4 domonoes
(4)	30.	1 mollasses	2 molaces	3 molases	4 molasses
(2)	31.	1 decendent	2 descendant	3 desendent	4 decendant
(1)	32.	1 decorate	2 decrate	3 deckorate	4 decarate
(2)	33.	1 sertenly	2 certainly	3 certenly	4 certanly

(3)	34. 1	manafacturing	2 manufactering	3 manufactoring	4 manufacturing
(2)	35. 1	cemetery	2 cemetary	3 cematary	4 sematary
(4)	36. 1	sufishent	2 sufficent	3 safishent	4 sufficient
(3)	37. 1	califlower	2 colaflower	3 cauliflower	4 calaflower
(2)	38. 1	govenor	2 governor	3 govener	4 governer
(4)	39. 1	artifishel	2 artfishel	3 artifical	4 artificial
(1)	40. 1	accommodate	2 acomodate	3 acomadate	4 accomodate
(2)	41. 1	generaly	2 generally	3 generly	4 genarly
(4)	42. 1	foriegn	2 forn	3 foren	4 foreign
(1)	43. 1	faucet	2 foset	3 fosit	4 fosset
(2)	44. 1	praire	2 prairie	3 prarie	4 prairy
(4)	45. 1	experence	2 experince	3 experiance	4 experience
(3)	46. 1	plumer	2 plummer	3 plumber	4 plomer
(1)	47. 1	eraser	2 eracer	3 earser	4 ereaser
(2)	48. 1	assocation	2 association	3 assoation	4 accoation
(4)	49. 1	incourage	2 encourge	3 incurage	4 encourage
(1)	50. 1	millinery	2 millenery	3 millenary	4 millanary
(1)	51. 1	furlow	2 furlough	3 furlo	4 ferlow
(2)	52. 1	disagreeble	2 disgreeable	3 disagreeable	4 disagreable
(2)	53. 1	bachler	2 bachelor	3 batchler	4 bachlor
(4)	54. 1	hickry	2 hicory	3 hickery	4 hickory
(2)	55. 1	counterfit	2 counterfeit	3 conterfit	4 counterfite
(1)	56. 1	acquainted	2 aquainted	3 aquanted	4 aqquainted
(3)	57. 1	oppisite	2 opposit	3 opposite	4 oppisit
(1)	58. 1	barracks	2 barricks	3 barraks	4 barax
(2)	59. 1	extiсy	2 ecstasy	3 extecy	4 extisy
(1)	60. 1	mohogany	2 mohogony	3 mahogony	4 mahogany
(2)	61. 1	discernable	2 disearnable	3 discernible	4 desernable
(2)	62. 1	cresent	2 crescent	3 cressent	4 cresant
(1)	63. 1	poultice	2 poltis	3 poltus	4 poltice
(4)	64. 1	garantee	2 garentee	3 gaurantee	4 guarantee
(3)	65. 1	demention	2 dimention	3 dimension	2 demension
(1)	66. 1	disappointment	2 dissapointment	3 disapointment	4 dissappointment
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(4)	82. 1	comittee	2 commity	3 committe	4 committee
(1)	83. 1	amateur	2 amature	3 amiture	4 ameture
(2)	84. 1	bargin	2 bargain	3 bargan	4 bargian

Directions: Follow the directions for each part. The time to be allowed is 5 minutes for each of parts I and II, and 3 minutes for each of parts III, IV, and V.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

PRIMARY ACHIEVEMENT TEST

By Mayme McCarter and Kathryn Kayser
K. S. T. C., Emporia, Kansas.

54
TOTAL NUMBER POINTS

Name Dick Cromwell Town Lincoln Kansas
School North Building Age 6 Grade 1st
Teacher Mitchell Kreag State Ks. Date Mar. 4

PART I.

DIRECTIONS: Find the answer to each example and write it where it belongs. Begin at the top and work straight down in each row. When you have worked the row of samples, wait for the signal to begin before you start on the others. (Allow exactly 5 minutes for Part I.)

Samples

(a)
Add
1
+ 1
2

(b)
Add
1
+ 2
3

(c)
Subtract
4
− 1
3

(d)
Multiply
3
× 2
6

(1)
Add
4
+ 3
7

(2)
Add
6
+ 0
6

(3)
Add
6
4
2
5
17

(4)
Subtract
7
− 3
4

(5)
Add
18
+ 4
22

(6)
Subtract
13
− 6
7

(7)
Subtract
16
− 5
11

(8)
Add
23
10
77
23
133

(9)
Subtract
561
209
352

(10)
Add
604
183
216
1003

(11)
Subtract
4567
1389
3178

(12)
Multiply
3 × 6 = 18

(13)
Multiply
2 × 9 = 18

(14)
Multiply
0 × 7 = 0

(15)
Multiply
352
3
1056

(16)
Multiply
483
4
1932

(17)
Divide
2) 12
6

(18)
Divide
27 ÷ 3 = 9

(19)
Divide
5) 126
25 1

(20)
Divide
3) 304
30 4

PART II.

DIRECTIONS: Read each line and think which word is left out where the blank is. The word left out is always a number. Write that number in the blank. When you have done the samples, wait for the signal to begin before you start on the others.

Samples:

(a) One boy and one boy are ....2.... boys.
(b) Two apples and one apple are ..... apples.
(c) If Mary has two apples and eats one apple, she has ..... apples left.

(Allow exactly 5 minutes for Part II.)

1. Three birds and two birds are .5. . . birds.
2. Four chairs and two chairs are .6. . . chairs.
3. Jack is six years old. Alice is four years old. Jack is .2. . years older than Alice.
4. Mother said she had hidden 14 Easter eggs. I have found 8. 6. . . are left for me to find.
5. Helen had nine paper dolls. She cut 7 more. She had .16. dolls.
6. Today is my birthday. I weigh 47 pounds. Last year I weighed 38 pounds. How many pounds have I gained? .9. .
7. The book I am reading has 205 pages. I just finished 87 pages. How many pages have I to read? . . . . .
8. Jane had 184 words in her spelling list. She had learned to spell 96. How many more had she to learn? . . . .
9. Jack put $2.58 in the school bank. His father gave him $1.29 more. How much did Jack have? . . . .
10. Walter sold 28 papers at 5c a copy. How much did he get for all? . . . .
11. Mary read a storybook through in 4 days. Each day she read 27 pages. There are . . . . pages in the book.
12. Billy's father paid 16 cents for postage stamps to mail some letters. Each stamp cost 2 cents. He mailed . . . . letters.
13. Jean earns 7c each day drying dishes. How long will it take her to earn enough to buy a doll that costs $3.80? . . . .
14. Joe earned $8.50 in 4 weeks. He earned . . . . per week.
15. Eight boys bought a tent costing $14.80. If they share equally, how much must each boy pay? . . . .

PART III.

DIRECTIONS: Draw a line under the word which is the correct answer to each question.

Samples:

(a) Which can see? chair dog bed
(b) Which one is red? ice orange apple
(c) Which one burns? water stone coal

(Allow exactly 3 minutes for Part III.)

1. Which one is green?
   cat dog grass sheep
2. Which one can sing?
   rabbit dog fish bird

3. Which one can walk?
ball boy nest house

4. Which one is tallest?
tree daisy rose sunflower

5. Which one is white?
coal brass gold snow

6. Which can go fastest?
train horse dog airplane

7. Which one swims?
chicken duck stone robin

8. Which one has wheels?
sled wagon doll top

9. Which can we eat?
clock table candle candy

10. Which is the oldest?
father boy baby grand-father

11. Which one can hear?
electric light woman picture
snowball

12. Which one grows on a tree?
apple potato carrot oyster

13. Which one can fly?
building piano eagle truck

14. In which country is rice raised?
Alaska England China Africa

15. Which is most valuable?
clay diamonds cabbage

16. Which grows in a garden?
rag weed spinach cactus

17. In which do you ride?
veranda temple jinrikisha

18. Who crossed the ocean in an airplane?
Columbus Lincoln Lindbergh

19. Edison is:
a musician a minister an inventor

20. Great Britain is:
an island an ocean a continent

PART IV.

DIRECTIONS: Put a cross like this (+) before each sentence that is true. Before a sentence that is not true put a straight line like this (—)

Samples: (+) (a) Birds can fly.
(—) (b) Cows can sing.
( ) (c) A sheep can talk.
( ) (d) Snow is white.

Remember (+) means true and (—) means not true.

(Allow exactly 3 minutes for this part.)

(—) 1. A rabbit has a long tail.
(—) 2. The sun comes up at night.
(+) 3. Birds can sing.
(+) 4. All apples are yellow.
(+) 5. I live in a house.
(+) 6. Boys like to play.
(+) 7. You must dress warm in winter.
(+) 8. Trees are green in summr.
(+) 9. Ice is colder than fire.
(+) 10. Christmas comes in the month of December.
(—) 11. Twelve is more than thirteen.
(—) 12. A monkey is larger than an elephant.
(+) 13. Iron is heavier than cotton.
(+) 14. Wednesday comes before Thursday.
(+) 15. People usually carry umbrellas when it rains.
(+) 16. People sometimes light their homes with electricity.
(+) 17. Automobiles are more expensive than potatoes.
(—) 18. Patriotism is a love for one's country.
( ) 19. The medicine man of the Indian tribe is a highly respected member of the tribe.
( ) 20. The Eskimo inhabits the desert regions.

PART V.

DIRECTIONS: First read the little story. Then read the sentences under the story and draw a line under the word or words which makes each correct.

Sample: Two birds had a nest in a tree. They sang all day. They sang because they were happy. In a few days there would be baby birds in the nest.

(a) Some birds had a: nest worm string
(b) They were: sad angry happy
(c) Little birds would be in the nest: in a day in a few days in many weeks

(Allow exactly 3 minutes for this part.)

I.

When Jack got up the ground was white with snow. He found his sled and went for a ride. Then he made a snow house.

1. Jack saw: the sky the snow the rain
2. He went for a ride on his: train sled pony
3. He made a house of: brick stone snow

II.

Mary and Billy went to see their grand-mother. She lived in the country. Billy liked to drive the horses. Mary liked to throw grain to the chickens.

4. Mary and Billy went to see their: uncle grand-mother aunt
5. She lived: in town in the city on a farm
6. Billy wanted to drive the: horses chickens goats
7. Mary liked to give the chickens: sand water feed

III.

Tom had a dog and a cat. The dog was white with black spots. The cat was black with white spots. One day the dog ran away. Tom didn't see him for a week.

8. Tom's dog was: brown black black and white
9. Tom could not find his: cat hen dog
10. His dog came back in: a year seven days a month

IV.

Alice had a birthday party. Her friends brought gifts to her. Mary gave her a doll that could go to sleep. Jane gave her a story book about a fairy queen. James gave her a top that would sing.

11. Mary gave Alice a: walking doll sleeping doll talking doll
12. James' gift was a: singing top jumping top bouncing top
13. Jane gave Mary a book with stories about: Indians kings fairies

V

Children have good times when school is out. They sometimes take trips to the mountains. Some children go to the country. Others go to the city and visit the zoo.

14. Children have fun: in cars in winter in vacation
15. Some go to the: mountains sea-shore the meadows
16. Some children like: the stories the street cars the animals

VI.

A man who owned a store advertised for a boy to work for him. He wanted a helper who was industrious. Jack and John asked for the job. John was a boy who never wasted time. Jack played all day.

17. The man gave the job to: Jack John

Directions: Follow the directions for each part. The time to be allowed is 5 minutes for each of parts I and II, and 3 minutes for each of parts III, IV, and V.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

PRIMARY ACHIEVEMENT TEST

By Mayme McCarter and Kathryn Kayser
K. S. T. C., Emporia, Kansas.

54
TOTAL NUMBER POINTS

Name Kathaleen J. Starbuck Town Lincoln

School Central Age 7 Grade II

Teacher ..... State Kansas Date April 4, 1930

PART I.

DIRECTIONS: Find the answer to each example and write it where it belongs. Begin at the top and work straight down in each row. When you have worked the row of samples, wait for the signal to begin before you start on the others. (Allow exactly 5 minutes for Part I.)

Samples

(a) Add 1 + 1 = 2

(b) Add 1 + 2 = 3

(c) Subtract 4 − 1 = 3

(d) Multiply 3 × 2 = 5

(1) Add 4 + 3 = 7

(2) Add 6 + 0 = 6

(3) Add 6, 4, 2, 5 = 17

(4) Subtract 7 − 3 = 4

(5) Add 18 + 4 = 22

(6) Subtract 13 − 6 = 4

(7) Subtract 16 − 5 = 11

(8) Add 23, 10, 77, 23 = 124

(9) Subtract 561 − 209 = 352

(10) Add 604, 183, 216 = 993

(11) Subtract 4567 − 1389 = 3200

(12) Multiply 3 × 6 = 18

(13) Multiply 2 × 9 = 18

(14) Multiply 0 × 7 = 7

(15) Multiply 352 × 3 = 1518

(16) Multiply 483 × 4 = 12

(17) Divide 2) 12

(18) Divide 27 ÷ 3 =

(19) Divide 5) 126

(20) Divide 3) 304

PART II.

DIRECTIONS: Read each line and think which word is left out where the blank is. The word left out is always a number. Write that number in the blank. When you have done the samples, wait for the signal to begin before you start on the others.

Samples:

(a) One boy and one boy are ....2.... boys.
(b) Two apples and one apple are ...3... apples.
(c) If Mary has two apples and eats one apple, she has ...1..... apples left.

(Allow exactly 5 minutes for Part II.)

1. Three birds and two birds are .5... birds.
2. Four chairs and two chairs are .6... chairs.
3. Jack is six years old. Alice is four years old. Jack is ..2.. years older than Alice.
4. Mother said she had hidden 14 Easter eggs. I have found 8. ..6.. are left for me to find.
5. Helen had nine paper dolls. She cut 7 more. She had ..7.. dolls.
6. Today is my birthday. I weigh 47 pounds. Last year I weighed 38 pounds. How many pounds have I gained? .9..
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DIRECTIONS: Draw a line under the word which is the correct answer to each question.

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(Allow exactly 3 minutes for Part III.)

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12

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EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
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PRIMARY ACHIEVEMENT TEST

By Mayme McCarter and Kathryn Kayser
K. S. T. C., Emporia, Kansas.

TOTAL NUMBER POINTS

Name Kemble Urbans Town Lincoln
School North Age 8 Grade Third
Teacher Ola Curtis State Kansas Date Apr 4, 1930

PART I.

DIRECTIONS: Find the answer to each example and write it where it belongs. Begin at the top and work straight down in each row. When you have worked the row of samples, wait for the signal to begin before you start on the others. (Allow exactly 5 minutes for Part I.)

Samples

(a) Add 1 + 1 = 2

(b) Add 1 + 2 = 3

(c) Subtract 4 − 1 = 3

(d) Multiply 3 × 2 = 6

(1) Add 4 + 3 = 7

(2) Add 6 + 0 = 6

(3) Add 6, 4, 2, 5 = 17

(4) Subtract 7 − 3 = 4

(5) Add 18 + 4 = 22

(6) Subtract 13 − 6 = 7

(7) Subtract 16 − 5 = 11

(8) Add 23, 10, 77, 23 = 133

(9) Subtract 561 − 209 = 352

(10) Add 604, 183, 216 = 1008

(11) Subtract 4567 − 1389 = 3178

(12) Multiply $3 \times 6 = 18$

(13) Multiply $2 \times 9 = 18$

(14) Multiply $0 \times 7 = 0$

(15) Multiply 352 × 3 = 1056

(16) Multiply 483 × 4 = 1932

(17) Divide $2\overline{)12} = 6$

(18) Divide $27 \div 3 = 9$

(19) Divide $5\overline{)126} = 230$

(20) Divide $3\overline{)304} = 101$

PART II.

DIRECTIONS: Read each line and think which word is left out where the blank is. The word left out is always a number. Write that number in the blank. When you have done the samples, wait for the signal to begin before you start on the others.

Samples:

(a) One boy and one boy are ....2.... boys.
(b) Two apples and one apple are ...3... apples.
(c) If Mary has two apples and eats one apple, she has ...1..... apples left.

(Allow exactly 5 minutes for Part II.)

1. Three birds and two birds are . 5. . birds.
2. Four chairs and two chairs are . .6. chairs.
3. Jack is six years old. Alice is four years old. Jack is . 2. . years older than Alice.
4. Mother said she had hidden 14 Easter eggs. I have found 8. 6. . . are left for me to find.
5. Helen had nine paper dolls. She cut 7 more. She had . .16 dolls.
6. Today is my birthday. I weigh 47 pounds. Last year I weighed 38 pounds. How many pounds have I gained? . .9. .
7. The book I am reading has 205 pages. I just finished 87 pages. How many pages have I to read? 118 . . . .
8. Jane had 184 words in her spelling list. She had learned to spell 96. How many more had she to learn? .88. .
9. Jack put $2.58 in the school bank. His father gave him $1.29 more. How much did Jack have? 3.87
10. Walter sold 28 papers at 5c a copy. How much did he get for all? 1.40.
11. Mary read a storybook through in 4 days. Each day she read 27 pages. There are .108 pages in the book.
12. Billy's father paid 16 cents for postage stamps to mail some letters. Each stamp cost 2 cents. He mailed .8. letters.
13. Jean earns 7c each day drying dishes. How long will it take her to earn enough to buy a doll that costs $3.80? 54 days
14. Joe earned $8.50 in 4 weeks. He earned $2.13 per week.
15. Eight boys bought a tent costing $14.80. If they share equally, how much must each boy pay? 1.85

PART III.

DIRECTIONS: Draw a line under the word which is the correct answer to each question.

Samples:

(a) Which can see? chair dog bed
(b) Which one is red? ice orange apple
(c) Which one burns? water stone coal

(Allow exactly 3 minutes for Part III.)

1. Which one is green?
   cat dog grass sheep
2. Which one can sing?
   rabbit dog fish bird

3. Which one can walk?
   ball boy nest house
4. Which one is tallest?
   tree daisy rose sunflower
5. Which one is white?
   coal brass gold snow
6. Which can go fastest?
   train horse dog airplane
7. Which one swims?
   chicken duck stone robin
8. Which one has wheels?
   sled wagon doll top
9. Which can we eat?
   clock table candle candy
10. Which is the oldest?
    father boy baby grand-father
11. Which one can hear?
    electric light woman picture snowball
12. Which one grows on a tree?
    apple potato carrot oyster
13. Which one can fly?
    building piano eagle truck
14. In which country is rice raised?
    Alaska England China Africa
15. Which is most valuable?
    clay diamonds cabbage
16. Which grows in a garden?
    rag-weed spinach cactus
17. In which do you ride?
    veranda temple jinrikisha
18. Who crossed the ocean in an airplane?
    Columbus Lincoln Lindbergh
19. Edison is:
    a musician a minister an inventor
20. Great Britain is:
    an island an ocean a continent

PART IV.

DIRECTIONS: Put a cross like this (+) before each sentence that is true. Before a sentence that is not true put a straight line like this (—)

Samples: (+) (a) Birds can fly.
(—) (b) Cows can sing.
(—) (c) A sheep can talk.
(+) (d) Snow is white.

Remember (+) means true and (—) means not true.

(Allow exactly 3 minutes for this part.)

(—) 1. A rabbit has a long tail.
(—) 2. The sun comes up at night.
(+) 3. Birds can sing.
(—) 4. All apples are yellow.
(+) 5. I live in a house.
(+) 6. Boys like to play.
(+) 7. You must dress warm in winter.
(+) 8. Trees are green in summr.
(+) 9. Ice is colder than fire.
(+) 10. Christmas comes in the month of December.
(—) 11. Twelve is more than thirteen.
(—) 12. A monkey is larger than an elephant.
(+) 13. Iron is heavier than cotton.
( ) 14. Wednesday comes before Thursday.
(+) 15. People usually carry umbrellas when it rains.
(+) 16. People sometimes light their homes with electricity.
(+) 17. Automobiles are more expensive than potatoes.
(+) 18. Patriotism is a love for one's country.
(+) 19. The medicine man of the Indian tribe is a highly respected member of the tribe.
(+) 20. The Eskimo inhabits the desert regions.

PART V.

DIRECTIONS: First read the little story. Then read the sentences under the story and draw a line under the word or words which makes each correct.

Sample: Two birds had a nest in a tree. They sang all day. They sang because they were happy. In a few days there would be baby birds in the nest.

(a) Some birds had a: nest worm string
(b) They were: sad angry happy
(c) Little birds would be in the nest: in a day in a few days in many weeks

(Allow exactly 3 minutes for this part.)

I.

When Jack got up the ground was white with snow. He found his sled and went for a ride. Then he made a snow house.

1. Jack saw: the sky the snow the rain
2. He went for a ride on his: train sled pony
3. He made a house of: brick stone snow

II.

Mary and Billy went to see their grand-mother. She lived in the country. Billy liked to drive the horses. Mary liked to throw grain to the chickens.

4. Mary and Billy went to see their: uncle grand-mother aunt
5. She lived: in town in the city on a farm
6. Billy wanted to drive the: horses chickens goats
7. Mary liked to give the chickens: sand water feed

III.

Tom had a dog and a cat. The dog was white with black spots. The cat was black with white spots. One day the dog ran away. Tom didn't see him for a week.

8. Tom's dog was: brown black black and white
9. Tom could not find his: cat hen dog
10. His dog came back in: a year seven days a month

IV.

Alice had a birthday party. Her friends brought gifts to her. Mary gave her a doll that could go to sleep. Jane gave her a story book about a fairy queen. James gave her a top that would sing.

11. Mary gave Alice a: walking doll sleeping doll talking doll
12. James' gift was a: singing top jumping top bouncing top
13. Jane gave Mary a book with stories about: Indians kings fairies

V

Children have good times when school is out. They sometimes take trips to the mountains. Some children go to the country. Others go to the city and visit the zoo.

14. Children have fun: in cars in winter in vacation
15. Some go to the: mountains sea-shore the meadows
16. Some children like: the stories the street cars the animals

VI.

A man who owned a store advertised for a boy to work for him. He wanted a helper who was industrious. Jack and John asked for the job. John was a boy who never wasted time. Jack played all day.

17. The man gave the job to: Jack John

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 20 minutes.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

GEOGRAPHY

By J. B. Stroud,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas Geography teachers.

67
TOTAL NUMBER POINTS

Name Helen Brockett Town Lincoln

School North Age 13 Grade 7

Teacher Miss Olsen State Kansas Date April 4

DIRECTIONS: Read the following sentences carefully. If a statement is true, place a plus (+) in the parenthesis in front of the statement, as in example A below. If the statement is false, make a minus (—) in the parenthesis in front of it as in example B. Make the + and the — small and clear.

Examples: (+) A. Apples are good to eat.
(—) B. Potatoes grow on trees.

PART I.

(—) 1. Europe has no great cotton belt.
(—) 2. North America has more people than any other continent.
(+) 3. Japan's chief export is tea.
(+) 4. Egypt is a country in Africa.
(—) 5. The Po River flows across the southern part of Russia.
(+) 6. The Thames is a river in southeastern England.
(—) 7. The chief industry in England is agriculture.
(+) 8. The Rhine river flows south through Germany.
(—) 9. Moscow is a city in Poland.
(+) 10. Valparaiso is a city in Chile.
(—) 11. Vienna is a city in Italy.
(+) 12. The largest river in the world is the Amazon.
(—) 13. Peking is a city in Japan.
(+) 14. The Nile flows south through Egypt.
(—) 15. Ceylon is an island just off the coast of South Africa.
(—) 16. The Andes is the largest mountain in Mexico.
(—) 17. Plains covered with rich grass in Argentina are called Tundras.
(+) 18. Belfast is a city in Ireland.
(+) 19. Borneo is an island southeast of Indo-China.
(+) 20. Death Valley is in California.
(—) 21. The Missouri River touches Minnesota.
(—) 22. Madrid is a city in southern France.
(+) 23. Georgia is the greatest cotton producing state in America.
(—) 24. Melbourne is a city in New Zealand.
(—) 25. The capital of New Hampshire is Montpelier.
(—) 26. Georgia has the largest area of any state east of the Mississippi.
(—) 27. Ohio ranks second in wealth among the states of the United States.
(+) 28. The capital of Oregon is Salem.
(+) 29. Cape Town is a city in Africa.
(—) 30. Milwaukee is the capital of Wisconsin.
(—) 31. Birmingham, Alabama, is one of the leading cities in the production of iron.
(—) 32. Indiana is a leading state in the production of iron ore.
(+) 33. The St. Lawrence river flows northeast.
(+) 34. Snow never falls in the West Indies.
(+) 35. The Island of Jamaica is in the Caribbean Sea.
(+) 36. The Rio Grande River is a natural boundary between Arizona and Mexico.
(+) 37. The Mississippi River is navigable as far north as St. Paul.
(—) 38. New York is the greatest cotton exporting point in the United States.
(+) 39. The Amazon River empties into the Atlantic Ocean.
(—) 40. The Orinoco River is the largest river in South America.
(—) 41. Argentina is similar to Kansas in climate.
(+) 42. Asia is called the "cradle of civilization."
(—) 43. The White Mountains are the largest range of mountains east of the Mississippi.
(+) 44. Pennsylvania is the second state in the United States in population.

PART II.

DIRECTIONS: Place the number of the part which makes the best answer to the statement in the parenthesis before the statement.

(3) The largest city in America is: **1. Detroit. 2. Washington. 3. New York. 4. Chicago.**

In this sample "New York" is the correct answer. The number in front of the word "New York" is "3." The figure 3 has been placed in the parenthesis.

(3) 45. Vienna is located on the: **1. Po River. 2. Rhine River. 3. Danube River. 4. Mediterranean Sea.**
(2) 46. A country that borders on the Med-

iterranean Sea is: 1. Rumania. 2. France. 3. Austria. 4. Bulgaria.

(1) 47. Madagascar belongs to: 1. England. 2. France. 3. Germany. 4. Holland.

(4) 48. The northern part of Europe is warmer than the northern part of North America because: 1. it is protected from the winds. 2. it is nearer the equator. 3. it has more coast line. 4. It is warmed by winds from the Gulf Stream.

(3) 49. Very little coal is needed for manufacturing in Switzerland because: 1. there are few factories. 2. all manufactured articles are shipped in. 3. the Swiss have harnessed the waterfalls and turned their power into electricity. 4. the Swiss need very few manufactured articles.

(1) 50. The rivers of Siberia are of limited commercial value because: 1. they are always frozen over. 2. they are too shallow. 3. there are too many rapids. 4. they flow north toward a land of snow and ice.

(3) 51. Little is known about the Himalaya Mountains because: 1. they are shut in with snow. 2. people have never tried to explore them. 3. travel is almost impossible. 4. there is a scarcity of food.

(2) 52. South America is a sparsely settled continent because of: 1. hostile natives. 2. its surface and climate. 3. few navigable rivers. 4. the jungles.

(3) 53. The United States gained control of the Philippine Islands: 1. by purchase. 2. by annexation. 3. as a result of the Spanish American War. 4. by a treaty made with the native Queen.

(1) 54. The capital of Poland is: 1. Warsaw. 2. Moscow. 3. Lodz. 4. Reval.

(3) 55. An island city with canals for streets is: 1. Florence. 2. Corinth. 3. Venice. 4. Rome.

(4) 56. The capital of Egypt is: 1. Alexandria. 2. Tunis. 3. Algiers. 4. Cairo.

(4) 67. The capital of Brazil is: 1. Santos. 2. Sao Paulo. 3. Bahia. 4. Rio de Janeiro.

(1) 58. The factories in the British Isles have grown chiefly because of: 1. energetic people. 2. the presence of coal and iron ore. 3. cool climate. 4. small countries.

(2) 59. The second country in Europe in manufacturing is: 1. Norway. 2. France. 3. Holland. 4. Germany.

(3) 60. The Pyramids are found in: 1. Europe. 2. Australia. 3. Africa. 4. North America.

(4) 61. The continent which has the greatest area in square miles is: 1. South Africa. 2. Africa. 3. Australia. 4. Asia.

(4) 62. The most important export of North America is: 1. petroleum. 2. cotton. 3. tobacco. 4. wheat.

(2) 63. The cork-oak trees are found in abundance in: 1. Switzerland. 2. Portugal. 3. North America. 4. Russia.

(1) 64. Spitzbergen belongs to: 1. Norway. 2. Sweden. 3. Holland. 4. Denmark.

(3) 65. The Sahara Desert is in: 1. Asia. 2. Europe. 3. Africa. 4. Australia.

(1) 66. A steppe is: 1. a flat plain with scanty grass. 2. an elevated plain. 3. a great region of hot grassland. 4. a marshy plain.

(3) 67. The chief export of Japan is: 1. bamboo. 2. rice. 3. silk. 4. tea.

(3) 68. The Yangtze Rivers is in: 1. India. 2. Japan. 3. China. 4. Indo-China.

(3) 69. The Himalaya Mountains are in: 1. Australia. 2. Africa. 3. Asia. 4. Europe.

(1) 70. The chief export of India is: 1. rice. 2. cotton. 3. cloth. 4. sugar. 5. silk.

(4) 71. The chief export of Java is: 1. tobacco. 2. tea. 3. rubber. 4. sugar.

(1) 72. The capital of Argentina is: 1. Buenos Aires. 2. Rio de Janeiro. 3. Santos. 4. Colombia.

(3) 73. The highest mountain peak in Europe is: 1. Mt. McKinley. 2. Mt. Everest. 3. Mt. Blanc. 4. Mt. Aconcagua.

(3) 74. The Kimberly diamond mines are in: 1. Europe. 2. Asia. 3. Africa. 4. South America.

(4) 75. The Johannesburg gold mines are in: 1. Australia. 2. North America. 3. Asia. 4. Africa.

(2) 76. The greatest coal exporter in the world is: 1. France. 2. United States. 3. England. 4. Germany.

(4) 77. The Scandinavians live in: 1. France. 2. Germany. 3. Holland. 4. Norway and Sweden.

(1) 78. 1. The Kiel Canal. 2. The Suez Canal. 3. The Panama Canal. connects the Baltic Sea with the North Sea.

(4) 79. Locations of cities are determined by: 1. race. 2. nationality. 3. winds. 4. a break in the transportation.

(4) 80. The highest mountain peak in North America is: 1. Mt. Logan. 2. Mt. Rainier. 3. Mt. Shasta. 4. Mt. McKinley.

(4) 81. Lake Titicaca is located in: 1. France. 2. India. 3. Chile. 4. Spain.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

AMERICAN HISTORY

By W. H. Gray,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas teachers of history.

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 20 minutes.

3 9+ TOTAL NUMBER POINTS

Name Richard Snyder Town Lincoln

School Lincoln Jr High Age 12 Grade 7

Teacher Victor Murphy State Kansas Date April 4 1930

PART I.

DIRECTIONS: Read the following sentences carefully. If a statement is true, place a plus (+) in the parethesis in front of the statement, as in example A below. If the statement is false, make a minus (—) in the parenthesis in front of it as in example B. Make the + and the — small and clear.

Examples: (+) A. Apples are good to eat.
(—) B. Potatoes grow on trees.

(+) 1. Our city population has increased faster than our rural population since 1860.
(—) 2. As a general policy the Democratic Party has always stood for low tariff.
(—) 3. The Non-Intercourse Act permitted trade with all countries except England and France.
(—) 4. The Sixteenth Amendment gave the negroes the right to vote.
(—) 5. The Alien law made it easier for foreigners to come to America.
(—) 6. It is generally accepted today that a state has the right to refuse to obey an act of the United States Congress if the state considers the act harmful to its welfare.
(+) 7. Great Britain enforced her Trade Laws more severely in the colonies after the close of the French and Indian War.
(—) 8. President Harding was opposed to leasing government-owned oil lands to private business concerns for the purpose of extracting the oil.
(—) 9. Maryland was the last state to ratify the Articles of Confederation.
(+) 10. The President appoints judges to the United States Supreme Court.
(—) 11. The colonies exported large quantities of manufactured goods during colonial times.
(+) 12. The Puritans of Massachusetts Bay prohibited the use of alcoholic liquors.
(+) 13. The Soldiers' Bonus was allowed under the administration of Calvin Coolidge.
(+) 14. The panic of 1837 was caused by the total failure of wheat, corn, and potatoes.
(+) 15. The "carpet bagger" was a southern politician who went north to gain political privileges.
(+) 16. Roosevelt as president was in favor of the United States spending money to reclaim desert lands by irrigation.
(+) 17. Congress has the constitutional power to lay a tax on any articles exported from any state.
(+) 18. The "Liberator" was an abolitionist paper published by William Lloyd Garrison.
(—) 19. The Ku Klux Klan was organized for the purpose of bringing the Southern States back into the Union.
(+) 20. The American Federation of Labor organized laborers of separate trades into local Unions.
(+) 21. Woman Suffrage was granted by the nineteenth amendment to the constitution.
(—) 22. Woman Suffrage legislation conferred citizenship on women.
(+) 23. Th Alabama Claims were claims presented to Congress by the State of Alabama for damages done to property in the Civil War.
(+) 24. The Missouri Compromise provided that Missouri should enter the union as a slave state but all territory obtained from Louisiana west of Missouri and north of 36 degrees 30 minutes should be free.
(+) 25. The Hartford Convention met in 1814 to provide a more effective trade agreement with France.

PART II.

DIRECTIONS: Place the number of the correct word in the parenthesis before the statement. Look carefully at this sample.

(3) The first president of the United States was: **1. Harding. 2. Hamilton. 3. Washington. 4. Lincoln.**

In this sample, "Washington" is the correct answer. The number in front of the word

"Washington" is 3. The figure 3 has been placed in the parenthesis.

(4) 26. America was discovered by: 1. Cortez. 2. Ponce de Leon. 3. La Salle. 4. Columbus.

(2) 27. The Constitution of the United States was ratified in: (1) 1788. (2) 1787. (3) 1776. (4) 1789.

(2) 28. The Mississippi River was explored by: 1. Samuel de Champlain. 2. Robert La Salle. 3. Francisco Coronado. 4. Ferdinand Magellan.

(2) 29. George Washington was connected with: 1. Purchase of Louisiana. 2. Valley Forge. 3. X. Y. Z. Affair. 4. Gettysburg.

(1) 30. The New England colonies about 1765 derived most of their wealth from: 1. trading and fishing. 2. cotton manufactures. 3. banking. 4. flour milling. 5. dairy products.

(4) 31. The colonists resisted the Stamp Act because: 1. the stamps were too costly. 2. France urged them to resist. 3. they wished to separate from Great Britain. 4. they felt they were being taxed without their consent. 5. they wished to take revenge for the Boston Massacre.

(2) 32. Which event happened the longest time ago? 1. building of Panama Canal. 2. building of Roosevelt Dam. 3. building of Baltimore and Ohio Railway. 4. building of Erie Canal.

(1) 33. What is annexation? 1. annihilation of property. 2. loss of territory. 3. addition of land. 4. an inauguration.

(2) 34. An armistice is: 1. a treaty. 2. the surrender of an army. 3. a temporary cessation of warfare. 4. an order from a court.

(2) 36. One part of Hamilton's financial scheme was to establish: 1. a U. S. treasury system as we have it today. 2. a U. S. Bank with the government as a stockholder. 3. a number of State Banks for the accommodation of the citizens of the various states.

(2) 37. Daniel Webster was associated with: 1. Dred Scott Decision. 2. fight against nullification. 3. Clayton-Bulwer treaty. 4. Missouri Compromise.

(1) 38. The Civil Service Reform was passed during the administration of: 1. Grover Cleveland. 2. Theodore Roosevelt. 3. Andrew Jackson. 4. William Taft.

(3) 39. With which was Abraham Lincoln associated? 1. Emancipation Proclamation. 2. "Carpet baggers." 3. 14th Amendment. 4. Dred Scott Decision.

(3) 40. Which one of the following was a delegate to the First Continental Congress? 1. Thomas Jefferson. 2. John Hancock. 3. Benjamin Franklin. 4. Patrick Henry.

(1) 41. The Kansas-Nebraska Bill was passed in: (1) 1861. (2) 1854. (3) 1864. (4) 1852.

(4) 42. The year 1812 is noted for : 1. compromise. 2. victory on Lake Erie. 3. Hartford Convention. 4. war with Canada.

(2) 43. The X. Y. Z. Affair pertained to: 1. a secret organization formed in the North to free slaves. 2. an attempt of French representatives to extort a bribe from men sent to repsent us in France. 3. a secret aggreement between France and Spain to re-capture the territory north of the St. Lawrence River.

(2) 44. When America is spoken of as "A Melting Pot," it pertains to: 1. big manufacturing. 2. Americanizing of foreigners. 3. the many hot springs found in this country. 4. Southern states which become very hot in summer.

(1) 45. One of the chief reasons why the Puritans came to America was: 1. to seek religious freedom. 2. to convert the Indians. 3. to get possession of the land before the French settled it.

(1) 46. To arbitrate means: 1. to rule harshly. 2. to refuse to sell. 3. to offer for sale. 4. to boycott. 5. to refer to disinterested parties for settlement.

(1) 47. Which of the following events came first: 1. annexation of Texas. 2. Mexican War. 3. administration of Zachary Taylor. 4. establishment of the Treasury System.

(1) 48. As a general policy the Democratic Party has always: 1. stood for a high protective tariff. 2. stood for a tariff for revenue only. 3. been against tariff of any kind.

(3) 49. Cornwallis surrendered at: 1. Camden. 2. Charleston. 3. Yorktown. 4. Guilford Court House.

(4) 50. A provision of the Compromise of 1850 was: 1. Missouri should be admitted as a slave state. 2. all territory taken from Mexico in the Mexican War should be free. 3. California should be admitted as a slave state. 4. a more stringent fugitive slave law should be passed.

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AMERICAN HISTORY

By W. H. Gray,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas teachers of history.

21
TOTAL NUMBER POINTS

Name Benjamin Marshall Town Lincoln

School Lincoln Jr. High Age 13 Grade 8

Teacher Victor Murphy State Kansas Date April 4

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(2) 29. George Washington was connected with: **1. Purchase of Louisiana. 2. Valley Forge. 3. X. Y. Z. Affair. 4. Gettysburg.**

(1) 30. The New England colonies about 1765 derived most of their wealth from: **1. trading and fishing. 2. cotton manufactures. 3. banking. 4. flour milling. 5. dairy products.**

(1) 31. The colonists resisted the Stamp Act because: **1. the stamps were too costly. 2. France urged them to resist. 3. they wished to separate from Great Britain. 4. they felt they were being taxed without their consent. 5. they wished to take revenge for the Boston Massacre.**

(3) 32. Which event happened the longest time ago? **1. building of Panama Canal. 2. building of Roosevelt Dam. 3. building of Baltimore and Ohio Railway. 4. building of Erie Canal.**

(4) 33. What is annexation? **1. annihilation of property. 2. loss of territory. 3. addition of land. 4. an inauguration.**

(2) 34. An armistice is: **1. a treaty. 2. the surrender of an army. 3. a temporary cessation of warfare. 4. an order from a court.**

(2) 36. One part of Hamilton's financial scheme was to establish: **1. a U. S. treasury system as we have it today. 2. a U. S. Bank with the government as a stockholder. 3. a number of State Banks for the accommodation of the citizens of the various states.**

(2) 37. Daniel Webster was associated with: **1. Dred Scott Decision. 2. fight against nullification. 3. Clayton-Bulwer treaty. 4. Missouri Compromise.**

(1) 38. The Civil Service Reform was passed during the administration of: **1. Grover Cleveland. 2. Theodore Roosevelt. 3. Andrew Jackson. 4. William Taft.**

(1) 39. With which was Abraham Lincoln associated? **1. Emancipation Proclamation. 2. "Carpet baggers." 3. 14th Amendment. 4. Dred Scott Decision.**

(2) 40. Which one of the following was a delegate to the First Continental Congress? **1. Thomas Jefferson. 2. John Hancock. 3. Benjamin Franklin. 4. Patrick Henry.**

(2) 41. The Kansas-Nebraska Bill was passed in: **(1) 1861. (2) 1854. (3) 1864. (4) 1852.**

(2) 42. The year 1812 is noted for : **1. compromise. 2. victory on Lake Erie. 3. Hartford Convention. 4. war with Canada.**

(2) 43. The X. Y. Z. Affair pertained to: **1. a secret organization formed in the North to free slaves. 2. an attempt of French representatives to extort a bribe from men sent to represent us in France. 3. a secret aggreement between France and Spain to re-capture the territory north of the St. Lawrence River.**

(2) 44. When America is spoken of as "A Melting Pot," it pertains to: **1. big manufacturing. 2. Americanizing of foreigners. 3. the many hot springs found in this country. 4. Southern states which become very hot in summer.**

(1) 45. One of the chief reasons why the Puritans came to America was: **1. to seek religious freedom. 2. to convert the Indians. 3. to get possession of the land before the French settled it.**

(5) 46. To arbitrate means: **1. to rule harshly. 2. to refuse to sell. 3. to offer for sale. 4. to boycott. 5. to refer to disinterested parties for settlement.**

(4) 47. Which of the following events came first: **1. annexation of Texas. 2. Mexican War. 3. administration of Zachary Taylor. 4. establishment of the Treasury System.**

(2) 48. As a general policy the Democratic Party has always: **1. stood for a high protective tariff. 2. stood for a tariff for revenue only. 3. been against tariff of any kind.**

(3) 49. Cornwallis surrendered at: **1. Camden. 2. Charleston. 3. Yorktown. 4. Guilford Court House.**

(4) 50. A provision of the Compromise of 1850 was: **1. Missouri should be admitted as a slave state. 2. all territory taken from Mexico in the Mexican War should be free. 3. California should be admitted as a slave state. 4. a more stringent fugitive slave law should be passed.**

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

LANGUAGE

By J. B. Stroud,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas teachers of English.

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

64
TOTAL NUMBER POINTS

Name Jeanne Reinking Town Lincoln

School Central Age 15 Grade 6th

Teacher Miss Emery State Kansas Date April 4

DIRECTIONS: This test consists of a number of sentences like the following examples:

Example A. (3) Apples **(1. grows, 2. grews, 3. grow)** on trees.

Of the three words in the parenthesis, the one which makes the sentence correct is to be chosen. In this example the word "grow" makes a correct sentence: "Apples grow on trees." To show that this word makes the sentence correct, its number, "3," has been placed in the parenthesis before the sentence.

Example B. (1) **(1. These, 2. Them, 3. That, 4. Them there)** pictures are pretty.

In example "B" the one word, of those in the parenthesis, which makes the sentence correct is "These." This makes the sentence "These pictures are pretty." To show that "These" is the correct word in this sentence, place the figure "1" in the parenthesis before it.

Example C. (2) The boys **(1. is, 2. are, 3. was, 4. ain't)** playing ball.

In example "C" which word makes a correct sentence? Now write the number before it in the parenthesis.

In each sentence choose the one word, of those in the parenthesis, which makes the sentence correct. Then write its number in the parenthesis before the sentence. Write nothing but the number.

DO NOT BEGIN UNTIL THE SIGNAL TO START IS GIVEN.

---

(2) 1. **(1. Us, 2. We)** girls are going to the movie.
(2) 2. The dogs **(1. is, 2. are, 3. am)** barking.
(3) 3. His wages **(1. was 2. is, 3. are)** small.
(2) 4. Is that **(1. her, 2. she)?**
(2) 5. The apple fell between her and **(1. me, 2. I).**
(3) 6. He has already **(1. go, 2. went, 3. gone).**
(2) 7. I **(1. written, 2. have wrote, 3. writed, 4. wrote)** two letters today.
(2) 8. It was **(1. me, 2. myself, 3. I)** who called you.
(2) 9. The father called her and **(1. he, 2. him, 3. himself).**
(2) 10. She was **(1. borned, 2. born)** in London.
( ) 11. Children **(1. like, 2. love, 3. likes)** to go on picnics.
(1) 12. My apple is larger than **(1. yours, 2. yourn).**
(2) 13. The girl divided her candy **(1. between, 2. among)** her four friends.
(1) 14. Helen **(1. will, 2. shall)** be ten years years old tomorrow.
(1) 15. Charity **(1. is when one gives, 2. means giving)** to the poor.
(1) 16. The murderer **(1. admitted, 2. declared, 3. contended)** he was guilty.
(1) 17. I **(1. taken, 2. took, 3. tooked, 4. taked)** the eggs to town.
(2) 18. He gave it to John and **(1. I, 2. me).**
(2) 19. Which is the **(1. greatest, 2. most, 3. more)** useful, gold or silver?
(2) 20. Neither she nor he **(1. is, 2. are, 3. have been)** rich.
(2) 21. I did not see **(1. none, 2. any, 3. some).**
(2) 22. His foot hurts **(1. bad, 2. badly).**
(2) 23. Both of **(1. us, 2. we)** boys are going.
(2) 24. Both of them **(1. is, 2. are, 3. am)** dear to me.
(2) 25. The airplane has **(1. flew, 2. flown, 3. flewed.)**
(1) 26. Mother, **(1. shall, 2. will)** I put more coal in the stove?
(1) 27. If I **(1. were, 2. was)** as large as you, I could do it too.
(3) 28. The hook is **(1. hisn, 2. himself's, 3. his).**
(1) 29. He is **(1. John's, 2. Johns', 3. Johns, 4. Johnses)** brother.
(1) 30. He sat **(1. beside, 2. besides)** me.
(1) 31. I **(1. remember of, 2. remember)** being there.

(1) 32. Peaches are **(1. plentiful, 2. plenty)** this season.
(2) 33. I have many books **(1. beside, 2. besides)** these.
(3) 34. The car hit the man **(1. square, 2. most square, 3. squarely).**
(1) 35. The whistle blew **(1. loudly, 2. loud, 3. most loud).**
(1) 36. Has the bell **(1. rang, 2. rung, 3. ringed)?**
(1) 37. She said she felt **(1. ill, 2. illy).**
(2) 38. It was **(1. me, 2. I, 3. myself)** who called him.
(1) 39. Mother says that I **(1. may, 2. can, 3. kin)** go.
(2) 40. My pencil is longer **(1. an, 2. than, 3. then)** yours.
(2) 41. I **(1. kindly, 2. rather, 3. sorter)** expected it.
(1) 42. If it **(1. were, 2. was)** to rain he would go.
(3) 43. There **(1. be, 2. am, 3. are, 4. is)** seven girls here.
(2) 44. He died **(1. with, 2. of)** pneumonia.
(1) 45. He got **(1. off, 2. off of, 3. from off of)** the platform.
(2) 46. Do you know who **(1. done, 2. did, 3. had did)** it?
(2) 47. Everyone **(1. were, 2. was, 3. have been)** at school today.
(2) 48. Every boy knew **(1. his, 2. their)** lessons.
(1) 49. I **(1. saw, 2. seen, 3. seed)** him do it.
(1) 50. Neither of the two **(1. write, 2. written, 3. writes, 4. have written)** well.
(3) 51. The boys **(1. is, 2. was, 3. were)** playing in the garden.
(1) 52. Jack, **(1. wasn't, 2. weren't, 3. was, 4. aren't)** you in school yesterday?
(1) 53. James's hat **(1. blew, 2. blown, 3. blowed)** off.
(3) 54. George **(1. beginned, 2. begun, 3. began)** reading.
(2) 55. The boy has **(1. ran, 2. run, 3. runned)** a mile.
(1) 56. The boy **(1. sat, 2. set, 3. sit, 4. seated)** himself under the tree.
(2) 57. We **(1. have got, 2. have)** measles.
(1) 58. We shall **(1. try to, 2. try and)** win the game.
(3) 59. Our house is **(1. het, 2. heat, 3. heated)** with steam.
(2) 60. Dorothy sings **(1. good, 2. well, 3. fine).**
(2) 61. The soldiers have **(1. come, 2. came, 3. went).**
(2) 62. How many dishes have you **(1. breaked, 2. broke, 3. broken, 4. braked)?**
(1) 63. The old woman **(1. can, 2. can't, 3. cannot, 4. couldn't)** hardly hear.
(2) 64. Will you pick **(1. them, 2. those, 3. these)** flowers beyond the brook for me?
(2) 65. The boys have **(1. ate, 2. eat, 3. eaten)** their supper.
(1) 66. **(1. Whom, 2. Who)** did you see there?
(2) 67. **(1. Whom, 2. Who)** was elected?
(1) 68. I am not so tall as **(1. she, 2. her, 3. herself).**
(2) 69. The child has **(1. sit, 2. sat, 3. set, 4. setted)** down.
(3) 70. The teacher **(1. teached, 2. learned, 3. taught)** her pupils.
(1) 71. I like **(1. this, 2. these, 3. those)** kind of apple.
(2) 72. The man said, "I will **(1. lay, 2. lie)** down."
(1) 73. The man **(1. sat, 2. set, 3. sit)** on a bench.
(1) 74. The balloon **(1. burst, 2. bursted, 3. busted).**
(2) 75. He **(1. sit, 2. sat, 3. set)** the bucket on the ground.
(2) 76. **(1. Can, 2. May, 3. Kin)** I write with your pencil?
(2) 77. She **(1. don't, 2. doesn't, 3. do not)** know her lessons.
(1) 78. The hen is **(1. setting, 2. sitting)** on sixteen eggs.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

LANGUAGE

By J. B. Stroud,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas teachers of English.

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

50
TOTAL NUMBER POINTS

Name Irvin Peterson Town Lincoln

School Lincoln Jr. High Age 13 Grade 7

Teacher Miss Rose State Kansas Date April

DIRECTIONS: This test consists of a number of sentences like the following examples:

Example A. (3) Apples **(1. grows, 2. grews, 3. grow)** on trees.

Of the three words in the parenthesis, the one which makes the sentence correct is to be chosen. In this example the word "grow" makes a correct sentence: "Apples grow on trees." To show that this word makes the sentence correct, its number, "3," has been placed in the parenthesis before the sentence.

Example B. (/) **(1. These, 2. Them, 3. That, 4. Them there)** pictures are pretty.

In example "B" the one word, of those in the parenthesis, which makes the sentence correct is "These." This makes the sentence "These pictures are pretty." To show that "These" is the correct word in this sentence, place the figure "1" in the parenthesis before it.

Example C. (2) The boys **(1. is, 2. are, 3. was, 4. ain't)** playing ball.

In example "C" which word makes a correct sentence? Now write the number before it in the parenthesis.

In each sentence choose the one word, of those in the parenthesis, which makes the sentence correct. Then write its number in the parenthesis before the sentence. Write nothing but the number.

DO NOT BEGIN UNTIL THE SIGNAL TO START IS GIVEN.

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(2) 1. **(1. Us, 2. We)** girls are going to the movie.
(2) 2. The dogs **(1. is, 2. are, 3. am)** barking.
(3) 3. His wages **(1. was 2. is, 3. are)** small.
(1) 4. Is that **(1. her, 2. she)?**
(2) 5. The apple fell between her and **(1. me, 2. I).**
(3) 6. He has already **(1. go, 2. went, 3. gone).**
(4) 7. I **(1. written, 2. have wrote, 3. writed, 4. wrote)** two letters today.
(3) 8. It was **(1. me, 2. myself, 3. I)** who called you.
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( ) 66. **(1. Whom, 2. Who)** did you see there?
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( ) 68. I am not so tall as **(1. she, 2. her, 3. herself).**
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LANGUAGE

By J. B. Stroud,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas teachers of English.

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

65 (62)
TOTAL NUMBER POINTS

Name Madonna Maher Town Lincoln

School Lincoln Jr. High Age 13 Grade 8th

Teacher Miss Rose State Kansas Date April 4

DIRECTIONS: This test consists of a number of sentences like the following examples:

Example A. (3) Apples **(1. grows, 2. grews, 3. grow)** on trees.

Of the three words in the parenthesis, the one which makes the sentence correct is to be chosen. In this example the word "grow" makes a correct sentence: "Apples grow on trees." To show that this word makes the sentence correct, its number, "3," has been placed in the parenthesis before the sentence.

Example B. (1) **(1. These, 2. Them, 3. That, 4. Them there)** pictures are pretty.

In example "B" the one word, of those in the parenthesis, which makes the sentence correct is "These." This makes the sentence "These pictures are pretty." To show that "These" is the correct word in this sentence, place the figure "1" in the parenthesis before it.

Example C. (2) The boys **(1. is, 2. are, 3. was, 4. ain't)** playing ball.

In example "C" which word makes a correct sentence? Now write the number before it in the parenthesis.

In each sentence choose the one word, of those in the parenthesis, which makes the sentence correct. Then write its number in the parenthesis before the sentence. Write nothing but the number.

DO NOT BEGIN UNTIL THE SIGNAL TO START IS GIVEN.

---

(2) 1. **(1. Us, 2. We)** girls are going to the movie.
(2) 2. The dogs **(1. is, 2. are, 3. am)** barking.
(3) 3. His wages **(1. was 2. is, 3. are)** small.
(1) 4. Is that **(1. her, 2. she)?**
(/) 5. The apple fell between her and **(1. me, 2. I).**
(3) 6. He has already **(1. go, 2. went, 3. gone).**
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(2) 31. I **(1. remember of, 2. remember)** being there.

(1) 32. Peaches are **(1. plentiful, 2. plenty)** this season.

(2) 33. I have many books **(1. beside, 2. besides)** these.

(1) 34. The car hit the man **(1. square, 2. most square, 3. squarely).**

(1) 35. The whistle blew **(1. loudly, 2. loud, 3. most loud).**

(2) 36. Has the bell **(1. rang, 2. rung, 3. ringed)?**

(1) 37. She said she felt **(1. ill, 2. illy).**

(1) 38. It was **(1. me, 2. I, 3. myself)** who called him.

(1) 39. Mother says that I **(1. may, 2. can, 3. kin)** go.

(2) 40. My pencil is longer **(1. an, 2. than, 3. then)** yours.

(2) 41. I **(1. kindly, 2. rather, 3. sorter)** expected it.

(2) 42. If it **(1. were, 2. was)** to rain he would go.

(3) 43. There **(1. be, 2. am, 3. are, 4. is)** seven girls here.

(1) 44. He died **(1. with, 2. of)** pneumonia.

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(2) 55. The boy has **(1. ran, 2. run, 3. runned)** a mile.

(4) 56. The boy **(1. sat, 2. set, 3. sit, 4. seated)** himself under the tree.

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(1) 66. **(1. Whom, 2. Who)** did you see there?

(2) 67. **(1. Whom, 2. Who)** was elected?

(1) 68. I am not so tall as **(1. she, 2. her, 3. herself).**

(2) 69. The child has **(1. sit, 2. sat, 3. set, 4. setted)** down.

(3) 70. The teacher **(1. teached, 2. learned, 3. taught)** her pupils.

(1) 71. I like **(1. this, 2. these, 3. those)** kind of apple.

(2) 72. The man said, "I will **(1. lay, 2. lie)** down."

(1) 73. The man **(1. sat, 2. set, 3. sit)** on a bench.

(3) 74. The balloon **(1. burst, 2. bursted, 3. busted).**

(2) 75. He **(1. sit, 2. sat, 3. set)** the bucket on the ground.

(2) 76. **(1. Can, 2. May, 3. Kin)** I write with your pencil?

(2) 77. She **(1. don't, 2. doesn't, 3. do not)** know her lessons.

(2) 78. The hen is **(1. setting, 2. sitting)** on sixteen eggs.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

READING

By W. H. Gray,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas teachers of reading.

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

29
TOTAL NUMBER POINTS

Name Miss Mae Pott Town Lincoln

School Central Age 9 Grade 4th

Teacher Miss Emily Smith State Kansas Date April 4, 1930

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Now read Example A.

Example A: Little John ran down the road. He had a reading book in one hand, a spelling book in the other, and a lunch-box under his right arm.

1. (3) What was the boy's name? 1. Roy. 2. William. 3. John. 4. Dick.

The correct answer to question No. 1 is "John" and this is answer No. 3. Hence a figure "3" has been placed in the parenthesis before the statement.

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The correct answer to statement No. 2 is "school." Hence a "2" has been placed before that statement.

3. (1) How did the boy travel? 1. on foot. 2. on horseback. 3. on skates. 4. by automobile. 5. by horse and buggy.

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Now, when the signal to begin is given, read as many of the following paragraphs as possible and answer as many of the statements as you can. You will be allowed exactly fifteen minutes.

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3. (1) The fence was made of: 1. wood. 2. stone. 3. wire. 4. cement. 5. rope.

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Once upon a time there was a farmer who had three sons. They were all idle fellows, and helped their father very little. One day the oldest son, named Peter, heard that the king wanted someone to take care of his rabbits.

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36. ( ) The true lover was revealed because of Cordelia's: 1. beauty. 2. wealth. 3. prosperity. 4. misfortune.

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In the upper reaches of the North Platte valley, 25 miles below the canyon through which the river enters the state of Wyoming and near the little town of Saratoga, is a series of hot springs. The great medicinal value of these springs was known long ago to Indian tribes, and the surrounding land has been one of their favorite camping grounds. One of the springs has been found to produce over a million gallons of water a day, others are of great capacity also, and it is estimated that their total daily flow is easily between three and four million gallons.

37. ( ) The Indians camped near the springs because they: 1. liked to see the water flow. 2. could drown their enemies. 3. thought the water good for their health. 4. could build boats.

38. ( ) The hot springs are in: 1. California. 2. Nebraska. 3. Colorado. 4. Wyoming. 5. New Mexico.

39. ( ) The water flows from the springs: 1. in huge quantities. 2. slowly. 3. intermittently. 4. in pipes. 5. in thin streams.

XIV.

Evidences of what apparently represents a peculiar method used by aboriginal Americans in grinding corn or other materials are to be found in certain parts of Kentucky in the form of ancient mortars commonly known as "hominy-holes." They occur on the floor of rock shelters or in boulders at the entrance to such shelters in the cliff regions of the state, and consist of conical holes excavated in the rock and generally worn smooth and deep by long use. In or near such holes may usually be found the pestles which were evidently used for crushing or grinding the grain in the holes.

40. ( ) The hominy-holes are generally: 1. square. 2. shallow. 3. smooth and deep. 4. full of water. 5. of different shapes.

41. ( ) The places where the aborigines ground their grain are called: 1. grist mills. 2. choppers. 3. caverns. 4. hominy-holes. 5. pestles.

42. ( ) The grinding places were located in: 1. sand. 2. clay. 3. stone. 4. trees. 5. buildings.

XV.

It is sport to watch a fox expend the riches of his craftiness upon the matter of **pauses.** Scores of times I have watched foxes in the wilds, either when they were just normally moving about or when they were being pursued. A fox acts as if one enemy were just behind him, another right in front of him, and several on each side. If he comes to a slight obstruction, such as a fallen log, he will set his forefeet upon it, pause, and, enjoying the advantage of a slight elevation, will scrutinize the surrounding woods. A wild thing generally pauses at an obstacle, at a road, at a pathway, at a turn. Both a deer and a fox will usually pause at a fence, less to get a stance for jumping than just to look about.

43. ( ) When being pursued a fox acts as if: 1. he had no enemies. 2. he were surrounded by enemies. 4. all his enemies were just behind him. 5. all his enemies were in front of him.

44. ( ) When he comes to an obstruction he: 1. runs around it. 2. jumps over it quickly. 3.crawls under it. 4. sets his fore-feet upon it. 5. turns back.

45. ( ) A deer and a fox pause at an obstacle to: 1. get a stance for jumping. 2. to look about. 3. to mislead their enemies. 4. to rest.

XVI.

Mental tests are instruments of measurement and not means of making guesses or estimates. They are therefore to be distinguished from methods of rating individual abilities by means of rating scales. They issue in numerical scores which can be manipulated by mathematical processes and combined or compared with other numerical scores.

( ) 46. Mental tests are: 1. rating scales. 2. estimates of ability. 3. measuring devices . 4. guesses.

( ) 47. Test results are compared by means of: 1. numerical devices. 2. teachers' judgments. 3. descriptions in words only. 4. watching the individual take the tests.

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Teacher Emily Curtis State Kansas Date April 4 to 30

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1. (3) What was the boy's name? 1. Roy. 2. William. 3. John. 4. Dick.

The correct answer to question No. 1 is "John" and this is answer No. 3. Hence a figure "3" has been placed in the parenthesis before the statement.

2. (2) The boy was going to : 1. church. 2. school. 3. a party. 4. a circus.

The correct answer to statement No. 2 is "school." Hence a "2" has been placed before that statement.

3. (1) How did the boy travel? 1. on foot. 2. on horseback. 3. on skates. 4. by automobile. 5. by horse and buggy.

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37. (3) The Indians camped near the springs because they: 1. liked to see the water flow. 2. could drown their enemies. 3. thought the water good for their health. 4. could build boats.

38. (4) The hot springs are in: 1. California. 2. Nebraska. 3. Colorado. 4. Wyoming. 5. New Mexico.

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Evidences of what apparently represents a peculiar method used by aboriginal Americans in grinding corn or other materials are to be found in certain parts of Kentucky in the form of ancient mortars commonly known as "hominy-holes." They occur on the floor of rock shelters or in boulders at the entrance to such shelters in the cliff regions of the state, and consist of conical holes excavated in the rock and generally worn smooth and deep by long use. In or near such holes may usually be found the pestles which were evidently used for crushing or grinding the grain in the holes.

40. (3) The hominy-holes are generally: 1. square. 2. shallow. 3. smooth and deep. 4. full of water. 5. of different shapes.

41. (4) The places where the aborigines ground their grain are called: 1. grist mills. 2. choppers. 3. caverns. 4. hominy-holes. 5. pestles.

42. (3) The grinding places were located in: 1. sand. 2. clay. 3. stone. 4. trees. 5. buildings.

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It is sport to watch a fox expend the riches of his craftiness upon the matter of **pauses**. Scores of times I have watched foxes in the wilds, either when they were just normally moving about or when they were being pursued. A fox acts as if one enemy were just behind him, another right in front of him, and several on each side. If he comes to a slight obstruction, such as a fallen log, he will set his forefeet upon it, pause, and, enjoying the advantage of a slight elevation, will scrutinize the surrounding woods. A wild thing generally pauses at an obstacle, at a road, at a pathway, at a turn. Both a deer and a fox will usually pause at a fence, less to get a stance for jumping than just to look about.

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Mental tests are instruments of measurement and not means of making guesses or estimates. They are therefore to be distinguished from methods of rating individual abilities by means of rating scales. They issue in numerical scores which can be manipulated by mathematical processes and combined or compared with other numerical scores.

( ) 46. Mental tests are: 1. rating scales. 2. estimates of ability. 3. measuring devices . 4. guesses.

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EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

READING

By W. H. Gray,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas teachers of reading.

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

20
TOTAL NUMBER POINTS

Name Viola White Town Lincoln

School Central Age 10 Grade sixth

Teacher Miss Emily Curtis State Kansas Date april 4, 1930

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Example A: Little John ran down the road. He had a reading book in one hand, a spelling book in the other, and a lunch-box under his right arm.

1. (3) What was the boy's name? 1. Roy. 2. William. 3. John. 4. Dick.

The correct answer to question No. 1 is "John" and this is answer No. 3. Hence a figure "3" has been placed in the parenthesis before the statement.

2. (2) The boy was going to : 1. church. 2. school. 3. a party. 4. a circus.

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Now, when the signal to begin is given, read as many of the following paragraphs as possible and answer as many of the statements as you can. You will be allowed exactly fifteen minutes.

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3. (2) The fence was made of: 1. wood. 2. stone. 3. wire. 4. cement. 5. rope.

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Once upon a time there was a farmer who had three sons. They were all idle fellows, and helped their father very little. One day the oldest son, named Peter, heard that the king wanted someone to take care of his rabbits.

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27. ( ) What are the river banks covered with? 1. trees. 2. green grass. 3. drifting logs. 4. cakes of ice. 5. snow.

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The sense of time as we know it seems to be spared to animals. They have no fears of what the future may hold; they don't consciously think over the happy days of youth gone by. Only animals which hunt their prey have some conception of the very near future. When waiting for moving prey to reappear from behind some obstacle, they estimate at least a short time interval and hold themselves ready to spring when their victim again comes into sight.

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XI.

Criminals and felons can be apprehended under certain circumstances by the imprint of their automobile tires. From a scientific study of the tire imprint and comparisons with marks on record in the sheriff's office, it is possible to determine the make and size of the tire, which wheel it is on, and the approximate type, load, and speed of the suspected car at the time the felony was committed. When suspicious-looking tire marks are discovered near the scene of a crime, a try-square is placed on the ground beside the marks, and measurements and photographs are taken. These data are compared with office records of the 450 different kinds of tire-tread patterns now in use. After determining the make, size, and position of the suspected tire, officers watch for cars having the distinguishing tire or tires.

31. ( ) The imprint of automobile tires is: 1. no help in detecting crime. 2. valuable in detecting crime. 3. a hindrance in detecting crime. 4. an aid to the criminal.

32. ( ) Tire imprints are examined by means of: 1. measurements. 2. a telescope. 3. a microscope. 4. just looking at them. 5. taking wax impressions.

33. ( ) The data are: 1. filed away in boxes. 2. published in newspapers. 3. sent to the criminal. 4. compared with marks on record in the sheriff's office.

XII.

The King of France and the Duke of Burgundy were now called in to hear the determination of King Lear about his youngest daughter and to know whether they would persist in their courtship of Cordelia, now that she was under her father's displeasure, and had no for-

tune to recommend her. The Duke of Burgundy would not take her to wife upon such a condition, but the King of France, saying that her virtues were a dowry above a kingdom, bade Cordelia take farewell of her father and be queen of him and of fair France. He called the Duke of Burgundy a waterish duke because his love for Cordelia had in a moment all run away like water.

34. ( ) This story teaches that a "waterish" person's friendship is: 1. lasting. 2. worthless. 3. pleasant. 4. desirable.

35. ( ) The Duke of Burgundy valued Cordelia for her: 1. fortune. 2. self. 3. beauty. 4. virtues.

36. ( ) The true lover was revealed because of Cordelia's: 1. beauty. 2. wealth. 3. prosperity. 4. misfortune.

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School Lincoln Jr. High Age 13 Grade 7th

Teacher Miss Rose State Kansas Date April 4 1930

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The correct answer to question No. 1 is "John" and this is answer No. 3. Hence a figure "3" has been placed in the parenthesis before the statement.

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The King of France and the Duke of Burgundy were now called in to hear the determination of King Lear about his youngest daughter and to know whether they would persist in their courtship of Cordelia, now that she was under her father's displeasure, and had no for-

tune to recommend her. The Duke of Burgundy would not take her to wife upon such a condition, but the King of France, saying that her virtues were a dowry above a kingdom, bade Cordelia take farewell of her father and be queen of him and of fair France. He called the Duke of Burgundy a waterish duke because his love for Cordelia had in a moment all run away like water.

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40. (3) The hominy-holes are generally: 1. square. 2. shallow. 3. smooth and deep. 4. full of water. 5. of different shapes.

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EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

READING

By W. H. Gray,
K. S. T. C., Emporia, Kansas.
With valuable assistance from Kansas teachers of reading.

45

TOTAL NUMBER POINTS

Name Gordon Bard Town Lincoln

School Lincoln Kans. Age 14 Grade 8

Teacher Miss Pearl Ross State Kansas Date April 4

DIRECTIONS: This is a test in Silent Reading. You will find a number of exercises like the sample below. Read these one at a time as rapidly as possible. After each exercise you will find a number of statements, or questions, on what you have read. For each of these statements there are several answers. Only one of these is correct. Decide which is the right answer and place the number before it in the parenthesis before the statement. If necessary, you may re-read a paragraph to find the correct answers.

Now read Example A.

Example A: Little John ran down the road. He had a reading book in one hand, a spelling book in the other, and a lunch-box under his right arm.

1. (3) What was the boy's name? 1. Roy. 2. William. 3. John. 4. Dick.

The correct answer to question No. 1 is "John" and this is answer No. 3. Hence a figure "3" has been placed in the parenthesis before the statement.

2. (2) The boy was going to : 1. church. 2. school. 3. a party. 4. a circus.

The correct answer to statement No. 2 is "school." Hence a "2" has been placed before that statement.

3. (1) How did the boy travel? 1. on foot. 2. on horseback. 3. on skates. 4. by automobile. 5. by horse and buggy.

What is the correct answer to question No. 3? Write the correct number in the parenthesis before the question.

Now, when the signal to begin is given, read as many of the following paragraphs as possible and answer as many of the statements as you can. You will be allowed exactly fifteen minutes.

I.

Joe was very fond of riding to the mill with his father. One very hot day as we drove along the dusty road we saw a boy sitting on an old-fashioned rail fence.

1. (3) Joe liked to ride with his: 1. cousin. 2. dog. 3. father. 4. playmates. 5. mother.
2. (2) The time of year was: 1. spring. 2. summer. 3. autumn. 4. winter.
3. (1) The fence was made of: 1. wood. 2. stone. 3. wire. 4. cement. 5. rope.

II.

Once upon a time there was a farmer who had three sons. They were all idle fellows, and helped their father very little. One day the oldest son, named Peter, heard that the king wanted someone to take care of his rabbits.

4. (3) The three boys were: 1. faithful. 2. industrious. 3. lazy. 4. fat. 5. handsome.
5. (2) They lived in the: 1. palace. 2. country. 3. city. 4. village.
6. (3) The king needed a: 1. baker. 2. gardner. 3. caretaker. 4. hunter.

III.

The sun was getting high, and it was warm. Birds sang and flitted about in the alders along the shore. Beautiful dragon-flies darted about over the water like little airplanes. One big, handsome dragon-fly kept dipping her tail in the water every few seconds.

7. (3) The dragon-flies flew like: 1. robins. 2. locusts. 3. airplanes. 4. kites. 5. fairies.
8. (2) The time of day was: 1. early morning. 2. near noon. 3. late afternoon. 4. evening. 5. night.
9. (4) The big dragon-fly was: 1. blue. 2. green. 3. ugly. 4. beautiful. 5. quiet.

IV.

How to Feed the Snowbirds—The crumbs from our tables are feasts for them, and a dish of water is a grateful gift for dry little throats that can not find any that has not been frozen into solid ice. Scattering crumbs on the snow or the open ground is well enough, and you will be thanked for it; but it is much better to put it into a box on top of a post, where the little feasters will not be subject to the sudden attack of a sneaking cat.

10. (4) Birds should be given water in winter because: 1. they need a bath. 2. the ground is frozen. 3. water outside is too dirty. 4. they cannot find any.

11. (4) The best way to feed the birds is to put the crumbs: 1. on the snow. 2. on the open ground. 3. in a dish on the ground. 4. in a box on a post.

12. (2) Cats can catch birds more easily when the birds are: 1. on a post. 2. on the ground. 3. flying. 4. sitting in a tree.

V.

When Mary Anne finally came running out, however, they seemed to forget that she was different and to accept her as one of themselves. One or two stroked her dress with curious fingers, and then felt of their own scanty garments of tanned leather, as though wondering how there could be such a difference. Some bold ones even touched her bright soft hair so oddly unlike their rough black locks. But most of them seemed to waste little thought upon the strangeness of her white skin and her blue checked dress, but fell to teaching her how to play their games of ball or showing her their ponies, brown and black, pinto and dapple gray. The horses were grazing in a scattered herd all about the group of lodges for Gray Eagle's village, while it contained no very vast number of people, was very rich in Indian wealth, which is counted by the number of horses each family owns.

13. (4) Mary Anne was dressed in: 1. tanned leather garments. 2. a red calico dress. 3. homespun. 4. a blue checked dress. 5. a fur coat.

14. (1) She was taught to: 1. play ball. 2. ride horseback. 3. make bead ornaments. 4. jump the rope. 5. wear moccasins.

15. (3) The Indians were wealthy because they had: 1. much money. 2. good crops. 3. many horses. 4. herds of buffalo. 5. slaves.

VI.

In the early days of our country, the old stagecoach carried Uncle Sam's mail. The stagecoach, drawn by four mules, lumbered along at the rate of six miles per hour, travelling three thousand miles in about five hundred hours. Three thousand miles is about the distance from coast to coast across the United States. After railroads were built across the country, Uncle Sam sent his mail by railway trains. Fast trains steamed over the rails at the rate of thirty miles an hour, making the trip across the continent in about one hundred hours. After the world war, Uncle Sam began using the airplane to help carry the mail. Today airplanes fly overhead at the rate of one hundred miles per hour, crossing the country in thirty hours.

16. (4) The stage coach was used for carrying: 1. lumber. 2. machinery. 3. mules. 4. mail. 5. food.

17. (3) A stage coach traveled about: 1. nine miles per hour. 2. thirty miles per hour. 3. six miles per hour. 4. one hundred miles per hour. 5. twelve miles per hour.

18. (3) The airplane was used to carry mail: 1. before the World War. 2. during the World War. 3. after the World War.

VII.

Once upon a time, Boris saved a boy from drowning, and was praised and rewarded richly for his deed. Ever since, Boris goes mad with joy whenever he catches sight of a child in the water. He has a passion for life-saving, as some dogs have for getting sticks. No one is safe in swimming, with Boris about. The Newfoundland is huge and powerful. He dives in, fastens his teeth in his vicitm's bathing suit and drags his victim to shore. He does not stop at one "rescue." He cleans out the lake or swimming hole. He tears bathing suits and spoils all thought of fun in the water when he is about.

19. (5) Whom did Boris save? 1. girl. 2. lady. 3. pet. 4. dog. 5. boy.

20. (3) Boris rescues people by: 1. barking at them. 2. tearing their bathing suits. 3. dragging them to shore. 4. preventing them from entering the water.

21. (3) The Newfoundland is: 1. small and wiry. 2. afraid of cats. 3. large and strong. 4. very short-haired. 5. long and lanky.

VIII.

To test the value of marketing only perfect fruit and vegetables, I heaped one basket of tomatoes especially full, then added one tomato with a rotted spot in it at the top of the basket. I had 30 baskets of tomatoes on sale but the one with the rotted tomato remained until all the others were sold. Then I removed the spoiled tomato. That basket contained at least a dozen more good tomatoes than any of the others, yet the spoiled one offset them, proof enough that one spoiled vegetable, fruit, or egg will prevent the sale of at least a dozen of its kind.

22. (2) The tomato at the top of the basket had: 1. a very smooth skin. 2. a decayed spot. 3. deep grooves. 4. green spots. 5. a large stem.

23. (4) Baskets of tomatoes which sell readily are those which: 1. contain the most fruit. 2. have beautiful decorations. 3. have blemishes on the fruit. 4. have perfect fruit.

24. (4) The material tested was: 1. wheat. 2. iron ore. 3. sugar. 4. garden produce.

IX.

The breaking of the ice on the large northern rivers has some peculiar features. Quite suddenly, the ice sheet breaks into huge blocks obstructing the current. The water rises immediately. Blocked ice in all streams cuts away great pieces of the steeper banks, producing genuine excavations. Stretches of surface ground cave in, trees and all. River shores, from the upper currents down to the mouth, are covered with masses of floating ice drifted ashore.

25. (5) The ice breaks into: 1. tiny pieces. 2. ice-bergs. 3. cubes. 4. thin slices. 5. huge blocks.

26. (2) The banks are cut away by: 1. ice moving freely. 2. blocked ice. 3. fast flowing water. 4. ice freezing suddenly.

27. (4) What are the river banks covered with? 1. trees. 2. green grass. 3. drifting logs. 4. cakes of ice. 5. snow.

X.

The sense of time as we know it seems to be spared to animals. They have no fears of what the future may hold; they don't consciously think over the happy days of youth gone by. Only animals which hunt their prey have some conception of the very near future. When waiting for moving prey to reappear from behind some obstacle, they estimate at least a short time interval and hold themselves ready to spring when their victim again comes into sight.

28. (4) Which animals have a notion of the very near future? 1. those that eat grass. 2. those that live in the ground. 3. those raised by man. 4. those that kill other animals. 5. those that live in trees.

29. ( ) Most of the lower animals: 1. fear the future. 2. have memories of the past. 3. have little conception of the future. 4. think continuously of tomorrow.

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April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

ARITHMETIC

By J. B. Stroud,
K. S. T. C., Emporia, Kansas,
with valuable assistance from Kansas arithmetic teachers.

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes for each part.

	Score
Part I	9
Part II	1
Total	10

8
9

Name Chloris McCoy Age 9 Grade 4

Town Lincoln State Kansas Date April 4

School Central Teacher A. H. Reinking

DIRECTIONS: Get the correct answer to as many examples as you can. Write the answers in the spaces left for them near each example. Make your answers stand out clearly.

PART I.

1. Add
   9
   4
   6

   19

2. 19 − 5 = 24

3. 7 × 8 = 56

4. 27 ÷ 9 = 3

5. 541
   × 2

   1082

6. Subtract
   649
   427

   222

7. Divide
   2) 628

   314

8. Add
   753
   614
   432

   1799

9. Divide
   5) 915

   151

10. Subtract
    6925
    3874

    3151

11. Multiply
    741
    3

    2223

12. 2135 ÷ 7 = 335

13. Add
    4806
    391
    8743
    7625

    21564

14. Multiply
    538
    25

    1690
    1076

15. 700 ÷ 10 = 7

16. Divide
    260
    45) 11700
    90

    270
    270

17. 900 × 100 =

18. Multiply
    875
    504

    3500
    4375

19. Divide
    26
    41) 1107
    82

    287
    246

20. 170.6
    × 100

    17060

21. Add
    13½
    6
    5¼
    16¼
    ---

22. Subtract
    5010
    2635
    ---

23. ½ − ¼ =

24. ⅗ + ⅖ =

25. ⅗ × ½ =

26. ⅝ ÷ 5 =

27. 8⅜ − 3⅝ =

28. Add
    7⅕
    12¾
    3⅙

    22

29. Divide
    .04) .648

30. Multiply
    5.44
    6.2
    ---

31. 24¾ ÷ 8¼ =

32. 8½ × 2½ =

33. 200 ÷ .622 =

34. 4⅜ × 2⅛ × 6⅞ =

35. Subtract
    4 yr. 3 mo. 20 da.
    2 yr. 6 mo. 10 da.
    ---

36. Add
    2 yd. 2 ft. 10 in.
    3 yd. 1 ft. 8 in.
    6 yd. 2 ft. 6 in.
    ---

37. Divide
    7) 40 lb. 6 oz.

38. 6896
    × 38⅞
    ---

39. 83.2 − 2.006 =

40. 0 × 832 =

PART II.

1. Frank sold 25 sheep and had 10 left. How many had he at first?

Ans. 35

2. George raised 3 prize pumpkins which weighed as follows: 14½ lbs., 13 lbs., and 16½ lbs. Find the average weight.

Ans. 42 ½

3. To make a trapeze, we need a steel bar 4 ft. 6 in. long. Find the cost if one foot is worth 60 cents.

Ans. 360

4. On a map in Mary's geography two cities are 2 in. apart. What is the actual distance between the cities, if ¼ in. on the map represents 25 miles?

Ans. 140

5. George has 70 rabbits; he sold 18 of them, then bought 23. How many rabbits has he now?

Ans. 62

6. Robert and James deliver packages on Saturday. Robert worked for 1¼ hrs. for Cook and 1¼ hrs. for Brown. James worked at Smith's for 1¾ hrs. Which boy worked longer?

Ans. .....

7. Walter was paid 20 cts. an hour last summer for mowing lawns. If he earned $5.40, how many hours did he work?

Ans. .....

8. Coleman bought a $16.50 Boy Scout suit from his uncle who gave him a 35% discount. How much did the suit cost Coleman?

Ans. .....

9. John Smith borrowed $450 from Jack Jones at 6% per annum. How much did he owe Mr. Jones at the end of 1 year?

Ans. .....

10. Lucile has $8.25. How much more must she save in order to buy a $4.50 hat and a $15.00 coat?

Ans. .....

11. There are 1,223 pupils in our grade schools. If the total cost to maintain the school for one year is $46,877.59, what is the average cost per pupil?

Ans. .....

12. I borrowed $1,000 at 5½% for 1 yr. What was the cost for the use of this money?

Ans. .....

13. A suit of clothes was marked $45, which was 50% more than the cost. What was the cost?

Ans. .....

14. An orchard contained 120 apple trees. If 40% of all the orchard is in apples, how many trees are there in the orchard?

Ans. .....

15. At 3¼ percent what will be the fee for selling a shipment of goods valued at $1,008?

Ans. .....

16. A citizen owns property which is assessed at $5,860. The rate of tax is $2.50 per $100. What is his semi-annual tax?

Ans. .....

17. A bridge is 90 ft. long and 20 ft. wide. How many board feet of lumber will it take to lay a floor on it if the planks used are 2 in. thick?

Ans. .....

18. Mrs. Brown bought a bolt of curtain material containing 17 yards. How many curtains each containing 4½ yds. can she make from it?

Ans. .....

19. A box of 25 apples cost $2.75. How much was that for each apple?

Ans. .....

20. Frank and James took care of a lawn one summer for $9. Frank mowed it 6 times and James 12 times. How much money should Frank receive?

Ans. .....

21. Over how many sq. yd. can a horse graze if tied to a post by a rope 25 ft. long? (Let $\pi=3.14$.) Make no allowance for fastening the rope.

Ans. .....

22. How much will the excavation for a cellar 30 ft. by 40 ft. and 6 ft. deep cost at 40 cents per cu. yd.?

Ans. .....

23. How many rods of wire are needed to build a 5 wire fence around a piece of ground 20 rd. square?

Ans. .....

24. A farmer has a cylindrical silo which is 10 ft. in diameter and 25 feet high. How many cu. ft. will it hold? (Use $\pi=3.14$.)

Ans. .....

25. In an examination, Susie tried 32 examples. This was 80% of the whole examination. How many examples were there in the examination?

Ans. .....

26. Find the weight of an iron bar that is 4 in. wide, 3 in. thick and 60 ft. long, if 1 cu. ft. weighs 480 lbs.

Ans. .....

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Score	
Part I	13
Part II	8
Total	21

Name Goldie Clark Age 12 Grade 5th

Town Lincoln State Kansas Date April 4, 1930

School Central Teacher Mr. Remburg

DIRECTIONS: Get the correct answer to as many examples as you can. Write the answers in the spaces left for them near each example. Make your answers stand out clearly.

PART I.

1. Add 9, 4, 6 — 19
2. 19 — 5 = 14
3. 7 × 8 = 56
4. 27 ÷ 9 = 3
5. 541 × 2 — 1,042
6. Subtract 649 − 427 — 222
7. Divide 2) 628 — 314
8. Add 753, 614, 432 — 1,799
9. Divide 5) 915 — 183
10. Subtract 6925 − 3874 — 3,151
11. Multiply 741 × 3 — 2,223
12. 2 1 3 5 ÷ 7 = 305
13. Add 4806, 391, 8743, 7625 — 21,565
14. Multiply 538 × 25 — 2690, 1076, 13450
15. 7 0 0 ÷ 10 =
16. Divide 45) 11700 — 2591 (did not have room)
17. 9 0 0 × 1 0 0 = 10,000
18. Multiply 875 × 504
19. 41) 1107
20. 170.6 × 100
21. Add 13½, 6, 5¼, 16¼
22. Subtract 5010 − 2635
23. ½ — ¼ =
24. ⅗ + ⅖ =
25. ⅗ × ½ =
26. ⅝ ÷ 5 =
27. 8⅜ — 3⅝ =
28. Add 7⅕, 12¾, 3⅙
29. Divide .04) .648
30. Multiply 5.44 × 6.2
31. 24¾ ÷ 8¼ =
32. 8½ × 2½ =
33. 2 0 0 ÷ . 6 2 2 =
34. 4⅜ × 2⅛ × 6⅞ =
35. Subtract
    4 yr. 3 mo. 20 da.
    2 yr. 6 mo. 10 da.
36. Add
    2 yd. 2 ft. 10 in.
    3 yd. 1 ft. 8 in.
    6 yd. 2 ft. 6 in.
37. Divide 7) 40 lb. 6 oz.
38. 6896 × 38⅞
39. 8 3 . 2 — 2 . 0 0 6 =
40. 0 × 8 3 2 =

PART II.

1. Frank sold 25 sheep and had 10 left. How many had he at first?

Ans. 35 sheep.

2. George raised 3 prize pumpkins which weighed as follows: 14½ lbs., 13 lbs., and 16½ lbs. Find the average weight.

Ans. 14 lbs

3. To make a trapeze, we need a steel bar 4 ft. 6 in. long. Find the cost if one foot is worth 60 cents.

Ans. $2.70

4. On a map in Mary's geography two cities are 2 in. apart. What is the actual distance between the cities, if ¼ in. on the map represents 25 miles?

Ans. .....

5. George has 70 rabbits; he sold 18 of them, then bought 23. How many rabbits has he now?

Ans. 75 rabbits.

6. Robert and James deliver packages on Saturday. Robert worked for 1¼ hrs. for Cook and 1¼ hrs. for Brown. James worked at Smith's for 1¾ hrs. Which boy worked longer?

Ans. Robert.

7. Walter was paid 20 cts. an hour last summer for mowing lawns. If he earned $5.40, how many hours did he work?

Ans. 27 hrs.

8. Coleman bought a $16.50 Boy Scout suit from his uncle who gave him a 35% discount. How much did the suit cost Coleman?

Ans. .....

9. John Smith borrowed $450 from Jack Jones at 6% per annum. How much did he owe Mr. Jones at the end of 1 year?

Ans. $27.00

10. Lucile has $8.25. How much more must she save in order to buy a $4.50 hat and a $15.00 coat?

Ans. $11.25

11. There are 1,223 pupils in our grade schools. If the total cost to maintain the school for one year is $46,877.59, what is the average cost per pupil?

Ans. .....

12. I borrowed $1,000 at 5½% for 1 yr. What was the cost for the use of this money?

Ans. $60.00

13. A suit of clothes was marked $45, which was 50% more than the cost. What was the cost?

Ans. $9 more

14. An orchard contained 120 apple trees. If 40% of all the orchard is in apples, how many trees are there in the orchard?

Ans. 3

15. At 3¼ percent what will be the fee for selling a shipment of goods valued at $1,008?

Ans. $34.76

16. A citizen owns property which is assessed at $5,860. The rate of tax is $2.50 per $100. What is his semi-annual tax?

Ans. .....

17. A bridge is 90 ft. long and 20 ft. wide. How many board feet of lumber will it take to lay a floor on it if the planks used are 2 in. thick?

Ans. .....

18. Mrs. Brown bought a bolt of curtain material containing 17 yards. How many curtains each containing 4½ yds. can she make from it?

Ans. 4 ½ curtains.

19. A box of 25 apples cost $2.75. How much was that for each apple?

Ans. 11 ¢ each.

20. Frank and James took care of a lawn one summer for $9. Frank mowed it 6 times and James 12 times. How much money should Frank receive?

Ans. .....

21. Over how many sq. yd. can a horse graze if tied to a post by a rope 25 ft. long? (Let π=3.14.) Make no allowance for fastening the rope.

Ans. .....

22. How much will the excavation for a cellar 30 ft. by 40 ft. and 6 ft. deep cost at 40 cents per cu. yd.?

Ans. .....

23. How many rods of wire are needed to build a 5 wire fence around a piece of ground 20 rd. square?

Ans. .....

24. A farmer has a cylindrical silo which is 10 ft. in diameter and 25 feet high. How many cu. ft. will it hold? (Use π=3.14.)

Ans. .....

25. In an examination, Susie tried 32 examples. This was 80% of the whole examination. How many examples were there in the examination?

Ans. .....

26. Find the weight of an iron bar that is 4 in. wide, 3 in. thick and 60 ft. long, if 1 cu. ft. weighs 480 lbs.

Ans. .....

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes for each part.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

ARITHMETIC

By J. B. Stroud,
K. S. T. C., Emporia, Kansas.
with valuable assistance from Kansas arithmetic teachers.

	Score
Part I	~~27~~ 26
Part II	5
Total	~~32~~ 31

Name Frances Lewis Age 11 Grade six
Town Lincoln State Kansas Date April 4
School Central Teacher Mr. Rienking

DIRECTIONS: Get the correct answer to as many examples as you can. Write the answers in the spaces left for them near each example. Make your answers stand out clearly.

PART I.

1. Add 9, 4, 6 — 19
2. 19 — 5 = 14
3. 7 × 8 = 56
4. 27 ÷ 9 = 3
5. 541 × 2 — 1,082
6. Subtract 649 − 427 — 222
7. Divide 2) 628 — 314
8. Add 753, 614, 432 — 1,799
9. Divide 5) 915 — 183
10. Subtract 6925 − 3874 — 3,051
11. Multiply 741 × 3 — 2,223
12. 2135 ÷ 7 = 305
13. Add 4806, 391, 8743, 7625 — 21,565
14. Multiply 538 × 25 — 2690, 1076, 13450
15. 700 ÷ 10 = 70
16. Divide 45) 11700 — 260 (90, 270, 270, 000)
17. 900 × 100 = 90,000
18. Multiply 875 × 504 — 3500, 4375, 441,000
19. 41) 1107 — 27 (82, 287, 287)
20. 170.6 × 100 — 170,600
21. Add 13½, 6, 5¼, 16¼ — 40 4/4 = 1, 41
22. Subtract 5010 − 2635 — 2,375
23. ½ — ¼ = 1/4
24. ⅗ + ⅖ = 5/5 = 1
25. ⅗ × ½ = 3/10
26. ⅝ ÷ 5 = 1/8
27. 8⅜ — 3⅝ =
28. Add 7⅕, 12¾, 3⅙ — 22
29. Divide .04) .648 — 00.162
30. Multiply 5.44 × 6.2 — 1088, 3264, 329.488
31. 24¾ ÷ 8¼ = 33
32. 8½ × 2½ = 21¼
33. 200 ÷ .622 =
34. 4⅜ × 2⅛ × 6⅞ =
35. Subtract 4 yr. 3 mo. 20 da. − 2 yr. 6 mo. 10 da.
36. Add 2 yd. 2 ft. 10 in., 3 yd. 1 ft. 8 in., 6 yd. 2 ft. 6 in.
37. Divide 7) 40 lb. 6 oz.
38. 6896 × 38⅞
39. 83.2 — 2.006 =
40. 0 × 832 =

PART II.

1. Frank sold 25 sheep and had 10 left. How many had he at first?

Ans. 35 sheep.

2. George raised 3 prize pumpkins which weighed as follows: 14½ lbs., 13 lbs., and 16½ lbs. Find the average weight.

Ans. 14⅓ lbs each.

3. To make a trapeze, we need a steel bar 4 ft. 6 in. long. Find the cost if one foot is worth 60 cents.

Ans. $2.70

4. On a map in Mary's geography two cities are 2 in. apart. What is the actual distance between the cities, if ¼ in. on the map represents 25 miles?

Ans. 50 miles.

5. George has 70 rabbits; he sold 18 of them, then bought 23. How many rabbits has he now?

Ans. 93 rabbits

6. Robert and James deliver packages on Saturday. Robert worked for 1¼ hrs. for Cook and 1¼ hrs. for Brown. James worked at Smith's for 1¾ hrs. Which boy worked longer?

Ans. Robert

7. Walter was paid 20 cts. an hour last summer for mowing lawns. If he earned $5.40, how many hours did he work?

Ans. 27 hrs.

8. Coleman bought a $16.50 Boy Scout suit from his uncle who gave him a 35% discount. How much did the suit cost Coleman?

Ans. $16.15

9. John Smith borrowed $450 from Jack Jones at 6% per annum. How much did he owe Mr. Jones at the end of 1 year?

Ans. $2265

10. Lucile has $8.25. How much more must she save in order to buy a $4.50 hat and a $15.00 coat?

Ans. $11.25

11. There are 1,223 pupils in our grade schools. If the total cost to maintain the school for one year is $46,877.59, what is the average cost per pupil?

Ans. .....

12. I borrowed $1,000 at 5½% for 1 yr. What was the cost for the use of this money?

Ans. .....

13. A suit of clothes was marked $45, which was 50% more than the cost. What was the cost?

Ans. .....

14. An orchard contained 120 apple trees. If 40% of all the orchard is in apples, how many trees are there in the orchard?

Ans. .....

15. At 3¼ percent what will be the fee for selling a shipment of goods valued at $1,008?

Ans. .....

16. A citizen owns property which is assessed at $5,860. The rate of tax is $2.50 per $100. What is his semi-annual tax?

Ans. .....

17. A bridge is 90 ft. long and 20 ft. wide. How many board feet of lumber will it take to lay a floor on it if the planks used are 2 in. thick?

Ans. .....

18. Mrs. Brown bought a bolt of curtain material containing 17 yards. How many curtains each containing 4½ yds. can she make from it?

Ans. .....

19. A box of 25 apples cost $2.75. How much was that for each apple?

Ans. .....

20. Frank and James took care of a lawn one summer for $9. Frank mowed it 6 times and James 12 times. How much money should Frank receive?

Ans. .....

21. Over how many sq. yd. can a horse graze if tied to a post by a rope 25 ft. long? (Let $\pi=3.14$.) Make no allowance for fastening the rope.

Ans. .....

22. How much will the excavation for a cellar 30 ft. by 40 ft. and 6 ft. deep cost at 40 cents per cu. yd.?

Ans. .....

23. How many rods of wire are needed to build a 5 wire fence around a piece of ground 20 rd. square?

Ans. .....

24. A farmer has a cylindrical silo which is 10 ft. in diameter and 25 feet high. How many cu. ft. will it hold? (Use $\pi=3.14$.)

Ans. .....

25. In an examination, Susie tried 32 examples. This was 80% of the whole examination. How many examples were there in the examination?

Ans. .....

26. Find the weight of an iron bar that is 4 in. wide, 3 in. thick and 60 ft. long, if 1 cu. ft. weighs 480 lbs.

Ans. .....

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes for each part.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

ARITHMETIC

By J. B. Stroud,
K. S. T. C., Emporia, Kansas.
with valuable assistance from Kansas arithmetic teachers.

	Score
Part I	23
Part II	18
Total	41

Name Mary E Greene Age 13 Grade 7A

Town Lincoln State Kansas Date April 4

School Co. High School Teacher Mr. Murphy

DIRECTIONS: Get the correct answer to as many examples as you can. Write the answers in the spaces left for them near each example. Make your answers stand out clearly.

PART I.

1. Add
   9
   4
   6
   19

2. 19 — 5 = 14

3. 7 × 8 = 56

4. 27 ÷ 9 = 3

5. 541 × 2 = 1082

6. Subtract
   649
   427
   222

7. Divide
   2) 628
   314

8. Add
   753
   614
   432
   1799

9. Divide
   5) 915
   183

10. Subtract
    6925
    3874
    3051

11. Multiply
    741
    3
    2223

12. 2135 ÷ 7 = 305

13. Add
    4806
    391
    8743
    7625
    21565

14. Multiply
    538
    25
    13450

15. 700 ÷ 10 = 70

16. Divide
    45) 11700 — 260

17. 900 × 100 = 90000

18. Multiply
    875
    504
    703500

19. 41) 1107 — 27

20. 170.6 × 100 = 17060.0

21. Add
    13½
    6
    5¼
    16¼
    41

22. Subtract
    5010
    2635
    2365

23. ½ — ¼ = ¼

24. ⅗ + ⅖ = 1

25. ⅗ × ½ = 3/10

26. ⅝ ÷ 5 = ⅛

27. 8⅜ — 3⅝ =

28. Add
    7⅕
    12¾
    3 1/6

29. Divide
    .04) .648 — 16.2

30. Multiply
    5.44
    6.2
    1088
    3264
    33728

31. 24¾ ÷ 8¼ = 3

32. 8½ × 2½ = 21¼

33. 200 ÷ .622 = 32 48/311

34. 4⅜ × 2⅛ × 6⅞ =

35. Subtract
    4 yr. 3 mo. 20 da.
    2 yr. 6 mo. 10 da.
    1 yr. 7 mo. 10 da.

36. Add
    2 yd. 2 ft. 10 in.
    3 yd. 1 ft. 8 in.
    6 yd. 2 ft. 6 in.
    13 yd. 1 ft. 0 in.

37. Divide
    7) 40 lb. 6 oz. — 5 lb. 12 2/7 oz.

38. 6896 × 38⅞ = 268082

39. 83.2 — 2.006 = 81.194

40. 0 × 832 = 0

PART II.

1. Frank sold 25 sheep and had 10 left. How many had he at first?

Ans. 35 sheep

2. George raised 3 prize pumpkins which weighed as follows: 14½ lbs., 13 lbs., and 16½ lbs. Find the average weight.

Ans. 44 lbs.

3. To make a trapeze, we need a steel bar 4 ft. 6 in. long. Find the cost if one foot is worth 60 cents.

Ans. $2.70

4. On a map in Mary's geography two cities are 2 in. apart. What is the actual distance between the cities, if ¼ in. on the map represents 25 miles?

Ans. 200 miles.

5. George has 70 rabbits; he sold 18 of them, then bought 23. How many rabbits has he now?

Ans. 93 rabbits

6. Robert and James deliver packages on Saturday. Robert worked for 1¼ hrs. for Cook and 1¼ hrs. for Brown. James worked at Smith's for 1¾ hrs. Which boy worked longer?

Ans. Robert

7. Walter was paid 20 cts. an hour last summer for mowing lawns. If he earned $5.40, how many hours did he work?

Ans. 27 hours

8. Coleman bought a $16.50 Boy Scout suit from his uncle who gave him a 35% discount. How much did the suit cost Coleman?

Ans. $10.73 cost Coleman.

9. John Smith borrowed $450 from Jack Jones at 6% per annum. How much did he owe Mr. Jones at the end of 1 year?

Ans. $477

10. Lucile has $8.25. How much more must she save in order to buy a $4.50 hat and a $15.00 coat?

Ans. $11.25

11. There are 1,223 pupils in our grade schools. If the total cost to maintain the school for one year is $46,877.59, what is the average cost per pupil?

Ans. .....

12. I borrowed $1,000 at 5½% for 1 yr. What was the cost for the use of this money?

Ans. .....

13. A suit of clothes was marked $45, which was 50% more than the cost. What was the cost?

Ans. .....

14. An orchard contained 120 apple trees. If 40% of all the orchard is in apples, how many trees are there in the orchard?

Ans. .....

15. At 3¼ percent what will be the fee for selling a shipment of goods valued at $1,008?

Ans. .....

16. A citizen owns property which is assessed at $5,860. The rate of tax is $2.50 per $100. What is his semi-annual tax?

Ans. .....

17. A bridge is 90 ft. long and 20 ft. wide. How many board feet of lumber will it take to lay a floor on it if the planks used are 2 in. thick?

Ans. .....

18. Mrs. Brown bought a bolt of curtain material containing 17 yards. How many curtains each containing 4½ yds. can she make from it?

Ans. .....

19. A box of 25 apples cost $2.75. How much was that for each apple?

Ans. .....

20. Frank and James took care of a lawn one summer for $9. Frank mowed it 6 times and James 12 times. How much money should Frank receive?

Ans. .....

21. Over how many sq. yd. can a horse graze if tied to a post by a rope 25 ft. long? (Let π=3.14.) Make no allowance for fastening the rope.

Ans. .....

22. How much will the excavation for a cellar 30 ft. by 40 ft. and 6 ft. deep cost at 40 cents per cu. yd.?

Ans. .....

23. How many rods of wire are needed to build a 5 wire fence around a piece of ground 20 rd. square?

Ans. .....

24. A farmer has a cylindrical silo which is 10 ft. in diameter and 25 feet high. How many cu. ft. will it hold? (Use π=3.14.)

Ans. .....

25. In an examination, Susie tried 32 examples. This was 80% of the whole examination. How many examples were there in the examination?

Ans. .....

26. Find the weight of an iron bar that is 4 in. wide, 3 in. thick and 60 ft. long, if 1 cu. ft. weighs 480 lbs.

Ans. .....

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes for each part.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

ARITHMETIC

By J. B. Stroud,
K. S. T. C., Emporia, Kansas.
with valuable assistance from Kansas arithmetic teachers.

	Score
Part I	32
Part II	17
Total	49

Name Benjamin Marshall Age 13 Grade 8

Town Lincoln State Kansas Date April 4

School Lincoln Jr. High Teacher Victor Trumbly

DIRECTIONS: Get the correct answer to as many examples as you can. Write the answers in the spaces left for them near each example. Make your answers stand out clearly.

PART I.

1. Add
   9
   4
   6

   19

2. 19 — 5 = 14

3. 7 × 8 = 56

4. 27 ÷ 9 = 3

5. 541
   × 2

   1082

6. Subtract
   649
   427

   222

7. Divide
   2) 628
   314

8. Add
   753
   614
   432

   1799

9. Divide
   5) 915
   183

10. Subtract
    6925
    3874

    3051

11. Multiply
    741
    3

    2223

12. 2135 ÷ 7 = 305

13. Add
    4806
    391
    8743
    7625

    21565

14. Multiply
    538
    25

    2690
    1076

    13450

15. 700 ÷ 10 = 70

16. Divide
    260
    45) 11700
    90
    270
    270

17. 900 × 100 = 90000

18. Multiply
    875
    504

    3500
    4375

    441000

19. 41) 1107
    82

    27

20. 170.6
    × 100

    17060

21. Add
    13½
    6
    5¼
    16¼

    41

22. Subtract
    5010
    2635

    2375

23. ½ — ¼ = ¼

24. ⅗ + ⅖ = 1

25. ⅗ × ½ = 3/10

26. ⅝ ÷ 5 = ⅛

27. 8⅜ — 3⅝ = X

28. Add
    7⅕
    12¾
    3⅙

    X

29. Divide
    .04) .648
    X

30. Multiply
    5.44
    6.2

    1088
    3264

    33.728

31. 24¾ ÷ 8¼ = 3

32. 8½ × 2½ = 21¼

33. 200 ÷ .622 = 321.70

34. 4⅜ × 2⅛ × 6⅞ = X

35. Subtract.
    4 yr. 3 mo. 20 da.
    2 yr. 6 mo. 10 da.
    ---
    2 yr 6 10 X

36. Add
    2 yd. 2 ft. 10 in.
    3 yd. 1 ft. 8 in.
    6 yd. 2 ft. 6 in.
    ---
    13 yd 1 ft. 0 in

37. Divide
    5 lb. 7 oz.
    7) 40 lb. 6 oz.

38. 862
    6896
    × 38⅞

    55168
    20688
    6205.4

    268082

39. 83.2 — 2.006 = 81.194

40. 0 × 832 = 0

PART II.

1. Frank sold 25 sheep and had 10 left. How many had he at first?

Ans. 35

2. George raised 3 prize pumpkins which weighed as follows: 14½ lbs., 13 lbs., and 16½ lbs. Find the average weight.

Ans. 14 3/6 lbs

3. To make a trapeze, we need a steel bar 4 ft. 6 in. long. Find the cost if one foot is worth 60 cents.

Ans. $2.70

4. On a map in Mary's geography two cities are 2 in. apart. What is the actual distance between the cities, if ¼ in. on the map represents 25 miles?

Ans. 200

5. George has 70 rabbits; he sold 18 of them, then bought 23. How many rabbits has he now?

Ans. 75

6. Robert and James deliver packages on Saturday. Robert worked for 1¼ hrs. for Cook and 1¼ hrs. for Brown. James worked at Smith's for 1¾ hrs. Which boy worked longer?

Ans. James

7. Walter was paid 20 cts. an hour last summer for mowing lawns. If he earned $5.40, how many hours did he work?

Ans. 27

8. Coleman bought a $16.50 Boy Scout suit from his uncle who gave him a 35% discount. How much did the suit cost Coleman?

Ans. $10.72

9. John Smith borrowed $450 from Jack Jones at 6% per annum. How much did he owe Mr. Jones at the end of 1 year?

Ans. $477

10. Lucile has $8.25. How much more must she save in order to buy a $4.50 hat and a $15.00 coat?

Ans. $11.25

11. There are 1,223 pupils in our grade schools. If the total cost to maintain the school for one year is $46,877.59, what is the average cost per pupil?

Ans.

12. I borrowed $1,000 at 5½% for 1 yr. What was the cost for the use of this money?

Ans. $55

13. A suit of clothes was marked $45, which was 50% more than the cost. What was the cost?

Ans. $2.2.50

14. An orchard contained 120 apple trees. If 40% of all the orchard is in apples, how many trees are there in the orchard?

Ans. 240

15. At 3¼ percent what will be the fee for selling a shipment of goods valued at $1,008?

Ans. 7

16. A citizen owns property which is assessed at $5,860. The rate of tax is $2.50 per $100. What is his semi-annual tax?

Ans. $73.25

17. A bridge is 90 ft. long and 20 ft. wide. How many board feet of lumber will it take to lay a floor on it if the planks used are 2 in. thick?

Ans.

18. Mrs. Brown bought a bolt of curtain material containing 17 yards. How many curtains each containing 4½ yds. can she make from it?

Ans. 3 and 2+

19. A box of 25 apples cost $2.75. How much was that for each apple?

Ans. 11¢

20. Frank and James took care of a lawn one summer for $9. Frank mowed it 6 times and James 12 times. How much money should Frank receive?

Ans. $3.00

21. Over how many sq. yd. can a horse graze if tied to a post by a rope 25 ft. long? (Let π=3.14.) Make no allowance for fastening the rope.

Ans. 540

22. How much will the excavation for a cellar 30 ft. by 40 ft. and 6 ft. deep cost at 40 cents per cu. yd.?

Ans. $106.66

23. How many rods of wire are needed to build a 5 wire fence around a piece of ground 20 rd. square?

Ans. 400 rds

24. A farmer has a cylindrical silo which is 10 ft. in diameter and 25 feet high. How many cu. ft. will it hold? (Use π=3.14.)

Ans.

25. In an examination, Susie tried 32 examples. This was 80% of the whole examination. How many examples were there in the examination?

Ans. 40

26. Find the weight of an iron bar that is 4 in. wide, 3 in. thick and 60 ft. long, if 1 cu. ft. weighs 480 lbs.

Ans. 2400 lbs

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930

Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

SPELLING

By W. H. Gray,
K. S. T. C., Emporia, Kansas.

49
TOTAL NUMBER POINTS

Name Raymond Rubart Town Lincoln

School Central Age 9 Grade 4th

Teacher Miss Kuhnman State Kansas Date April 4th 1930

DIRECTIONS: In each row across the page you will find four spellings of the same word. Only one of these is correct. Find the correct one and place the number before this word in the parenthesis at the left.

Example: (2) 1. gril 2. girl 3. gurl 4. girll

In this example the second word is the one spelled correctly. Hence the figure "2" has been placed in the parenthesis. Do all of the rows the same way. You will have exactly 15 minutes.

(1)	1. 1 several	2 severl	3 severel	4 sevral
(2)	2. 1 seperate	2 separate	3 seprate	4 seperrate
(2)	3. 1 enuf	2 enough	3 enought	4 enofe
(4)	4. 1 sissors	2 sissers	3 sisers	4 scissors
(4)	5. 1 sirpluse	2 serplus	3 sirplus	4 surplus
(4)	6. 1 library	2 libery	3 libray	4 libary
(2)	7. 1 lettas	2 lettuce	3 lettus	4 lettes
(2)	8. 1 gipsy	2 gypsy	3 gipsey	4 jipsy
(2)	9. 1 gose	2 gauze	3 gause	4 goze
(1)	10. 1 electric	2 electrict	3 electrick	4 eletric
(4)	11. 1 funnyest	2 funnest	3 funest	4 funniest
(4)	12. 1 enginear	2 engineer	3 enginer	4 enginere
(1)	13. 1 magazine	2 magzine	3 magazen	4 magizene
(2)	14. 1 develp	2 develope	3 develup	4 develop
(3)	15. 1 estimate	2 estmate	3 estamate	4 estemate
(2)	16. 1 biscuit	2 bisket	3 biscut	4 biskut
(2)	17. 1 beleave	2 believe	3 belive	4 beleve
(3)	18. 1 certen	2 surten	3 certain	4 sertan
(1)	19. 1 appitite	2 apatite	3 apitite	4 appetite
(4)	20. 1 telegram	2 telagram	3 tellagram	4 tellgram
(3)	21. 1 cabbeg	2 cabage	3 cabbage	4 cabbige
(2)	22. 1 bilding	2 building	3 bulding	4 biulding
(2)	23. 1 autum	2 autumn	3 autom	4 auttum
(3)	24. 1 menchen	2 menchin	3 mention	4 menshion
(2)	25. 1 ake	2 ache	3 acke	4 ach
(1)	26. 1 balloon	2 bloon	3 ballon	4 bollon
(1)	27. 1 complete	2 compleat	3 complet	4 comeplet
(1)	28. 1 pumpkin	2 punkin	3 pumkin	4 punken
(2)	29. 1 dominos	2 dominoes	3 domanoes	4 domonoes
(4)	30. 1 mollasses	2 molaces	3 molases	4 molasses
(1)	31. 1 decendent	2 descendant	3 desendent	4 decendant
(1)	32. 1 decorate	2 decrate	3 deckorate	4 decarate
(2)	33. 1 sertenly	2 certainly	3 certenly	4 certanly

(4)	34.	1	manafacturing	2	manufactering	3	manufactoring	4 manufacturing
(3)	35.	1	cemetery	2	cemetary	3	cematary	4 sematary
(4)	36.	1	sufishent	2	sufficent	3	safishent	4 sufficient
(3)	37.	1	califlower	2	colaflower	3	cauliflower	4 calaflower
(2)	38.	1	govenor	2	governor	3	govener	4 governer
(4)	39.	1	artifishel	2	artfishel	3	artifical	4 artificial
(4)	40.	1	accommodate	2	acomodate	3	acomadate	4 accomodate
(4)	41.	1	generaly	2	generally	3	generly	4 genarly
(4)	42.	1	foriegn	2	forn	3	foren	4 foreign
(1)	43.	1	faucet	2	foset	3	fosit	4 fosset
(4)	44.	1	praire	2	prairie	3	prarie	4 prairy
(3)	45.	1	experence	2	experince	3	experiance	4 experience
(3)	46.	1	plumer	2	plummer	3	plumber	4 plomer
(1)	47.	1	eraser	2	eracer	3	earser	4 ereaser
(2)	48.	1	assocation	2	association	3	assoation	4 accoation
(4)	49.	1	incourage	2	encourge	3	incurage	4 encourage
(4)	50.	1	millinery	2	millenery	3	millenary	4 millanary
(2)	51.	1	furlow	2	furlough	3	furlo	4 ferlow
(4)	52.	1	disagreeble	2	disgreeable	3	disagreeable	4 disagreable
(2)	53.	1	bachler	2	bachelor	3	batchler	4 bachlor
(4)	54.	1	hickry	2	hicory	3	hickery	4 hickory
(2)	55.	1	counterfit	2	counterfeit	3	conterfit	4 counterfite
(4)	56.	1	acquainted	2	aquainted	3	aquanted	4 aqquainted
(1)	57.	1	oppisite	2	opposit	3	opposite	4 oppisit
(1)	58.	1	barracks	2	barricks	3	barraks	4 barax
(1)	59.	1	extics	2	ecstasy	3	extecy	4 extisy
(4)	60.	1	mohogany	2	mohogony	3	mahogony	4 mahogany
(2)	61.	1	discernable	2	disearnable	3	discernible	4 desernable
(3)	62.	1	cresent	2	crescent	3	cressent	4 cresant
(4)	63.	1	poultice	2	poltis	3	poltus	4 poltice
(4)	64.	1	garantee	2	garentee	3	gaurantee	4 guarantee
(3)	65.	1	demention	2	dimention	3	dimension	2 demension
(2)	66.	1	disappointment	2	dissapointment	3	disapointment	4 dissappointment
(4)	67.	1	apologise	2	apologize	3	appologize	4 apoligize
(3)	68.	1	tortoise	2	tortus	3	tortise	4 tortis
(2)	69.	1	privilege	2	privilage	3	priviledge	4 privelage
(4)	70.	1	insesent	2	incessent	3	insessent	4 incessant
(1)	71.	1	termanal	2	termenal	3	terminal	4 termanel
(2)	72.	1	confedercy	2	confederacy	3	confedersy	4 confedericy
(1)	73.	1	varieties	2	varities	3	verities	4 varietys
(1)	74.	1	slauter	2	slotter	3	slaughter	4 sloter
(2)	75.	1	seperator	2	separator	3	seperater	4 separater
( )	76.	1	rediculous	2	rediculas	3	rediculious	4 ridiculous
( )	77.	1	sive	2	seive	3	sieve	4 scive
( )	78.	1	luxuriant	2	luxurant	3	luxurent	4 luxurient
( )	79.	1	pnemonia	2	pneumonia	3	newmonia	4 pnewmonia
( )	80.	1	malicous	2	molicious	3	malicious	4 mulishes
( )	81.	1	crystalize	2	cristalize	3	cristlize	4 christlize
( )	82.	1	comittee	2	commity	3	committe	4 committee
( )	83.	1	amateur	2	amature	3	amiture	4 ameture
( )	84.	1	bargin	2	bargain	3	bargan	4 bargian

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930

Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

SPELLING

By W. H. Gray,
K. S. T. C., Emporia, Kansas.

4 6
TOTAL NUMBER POINTS

Name Virginia Graves Town Lincoln

School Central school Age 10 years Grade 5th

Teacher Maria Hickman State Kansas Date April 4

DIRECTIONS: In each row across the page you will find four spellings of the same word. Only one of these is correct. Find the correct one and place the number before this word in the parenthesis at the left.

Example: (2) 1. gril 2. girl 3. gurl 4. girll

In this example the second word is the one spelled correctly. Hence the figure "2" has been placed in the parenthesis. Do all of the rows the same way. You will have exactly 15 minutes.

(/)	1. 1 several	2 severl	3 severel	4 sevral
(3)	2. 1 seperate	2 separate	3 seprate	4 seperrate
(2)	3. 1 enuf	2 enough	3 enought	4 enofe
(4)	4. 1 sissors	2 sissers	3 sisers	4 scissors
(4)	5. 1 sirpluse	2 serplus	3 sirplus	4 surplus
(/)	6. 1 library	2 libery	3 libray	4 libary
(2)	7. 1 lettas	2 lettuce	3 lettus	4 lettes
(2)	8. 1 gipsy	2 gypsy	3 gipsey	4 jipsy
(2)	9. 1 gose	2 gauze	3 gause	4 goze
(/)	10. 1 electric	2 electrict	3 electrick	4 eletric
(4)	11. 1 funnyest	2 funnest	3 funest	4 funniest
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(4)	76. 1	rediculous	2	rediculas	3	rediculious	4 ridiculous
(1)	77. 1	sive	2	seive	3	sieve	4 scive
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Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

SPELLING

By W. H. Gray,
K. S. T. C., Emporia, Kansas.

62
TOTAL NUMBER POINTS

Name Rose Curtis Town Lincoln

School Central Age 11 Grade 6 A

Teacher Miss Kuckman State Kansas Date April 4 1930

DIRECTIONS: In each row across the page you will find four spellings of the same word. Only one of these is correct. Find the correct one and place the number before this word in the parenthesis at the left.

Example: (2) 1. gril 2. girl 3. gurl 4. girll

In this example the second word is the one spelled correctly. Hence the figure "2" has been placed in the parenthesis. Do all of the rows the same way. You will have exactly 15 minutes.

(1)	1. 1 several	2 severl	3 severel	4 sevral
(2)	2. 1 seperate	2 separate	3 seprate	4 seperrate
(2)	3. 1 enuf	2 enough	3 enought	4 enofe
(4)	4. 1 sissors	2 sissers	3 sisers	4 scissors
(4)	5. 1 sirpluse	2 serplus	3 sirplus	4 surplus
(1)	6. 1 library	2 libery	3 libray	4 libary
(2)	7. 1 lettas	2 lettuce	3 lettus	4 lettes
(2)	8. 1 gipsy	2 gypsy	3 gipsey	4 jipsy
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EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930
Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

SPELLING

By W. H. Gray,
K. S. T. C., Emporia, Kansas.

80
TOTAL NUMBER POINTS

Name Kirk Mickle Town Lenora

School Union High Age 13 Grade 7A

Teacher Miss Rose State Kansas Date April 14 1930

DIRECTIONS: In each row across the page you will find four spellings of the same word. Only one of these is correct. Find the correct one and place the number before this word in the parenthesis at the left.

Example: (2) 1. gril 2. girl 3. gurl 4. girll

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(~~4~~)	1. 1 several	2 severl	3 severel	4 sevral
(~~4~~)	2. 1 seperate	2 separate	3 seprate	4 seperrate
(2)	3. 1 enuf	2 enough	3 enought	4 enofe
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(4)	36. 1	sufishent	2	sufficent	3	safishent	4 sufficient
(1)	37. 1	califlower	2	colaflower	3	cauliflower	4 calaflower
(2)	38. 1	govenor	2	governor	3	govener	4 governer
(3)	39. 1	artifishel	2	artfishel	3	artifical	4 artificial
(1)	40. 1	accommodate	2	acomodate	3	acomadate	4 accomodate
(1)	41. 1	generaly	2	generally	3	generly	4 genarly
(1)	42. 1	foriegn	2	forn	3	foren	4 foreign
(4)	43. 1	faucet	2	foset	3	fosit	4 fosset
(4)	44. 1	praire	2	prairie	3	prarie	4 prairy
(3)	45. 1	experence	2	experince	3	experiance	4 experience
(1)	46. 1	plumer	2	plummer	3	plumber	4 plomer
(2)	47. 1	eraser	2	eracer	3	earser	4 ereaser
(2)	48. 1	assocation	2	association	3	assoation	4 accoation
(1)	49. 1	incourage	2	encourge	3	incurage	4 encourage
(4)	50. 1	millinery	2	millenery	3	millenary	4 millanary
(1)	51. 1	furlow	2	furlough	3	furlo	4 ferlow
(3)	52. 1	disagreeble	2	disgreeable	3	disagreeable	4 disagreable
(3)	53. 1	bachler	2	bachelor	3	batchler	4 bachlor
(4)	54. 1	hickry	2	hicory	3	hickery	4 hickory
(1)	55. 1	counterfit	2	counterfeit	3	conterfit	4 counterfite
(1)	56. 1	acquainted	2	aquainted	3	aquanted	4 aqquainted
(3)	57. 1	oppisite	2	opposit	3	opposite	4 oppisit
(4)	58. 1	barracks	2	barricks	3	barraks	4 barax
(1)	59. 1	extiсy	2	ecstasy	3	extecy	4 extisy
(1)	60. 1	mohogany	2	mohogony	3	mahogony	4 mahogany
(2)	61. 1	discernable	2	disearnable	3	discernible	4 desernable
(4)	62. 1	cresent	2	crescent	3	cressent	4 cresant
(4)	63. 1	poultice	2	poltis	3	poltus	4 poltice
(1)	64. 1	garantee	2	garentee	3	gaurantee	4 guarantee
(1)	65. 1	demention	2	dimention	3	dimension	2 demension
(1)	66. 1	disappointment	2	dissapointment	3	disapointment	4 dissappointment
( )	67. 1	apologise	2	apologize	3	appologize	4 apoligize
( )	68. 1	tortoise	2	tortus	3	tortise	4 tortis
( )	69. 1	privilege	2	privilage	3	priviledge	4 privelage
( )	70. 1	insesent	2	incessent	3	insessent	4 incessant
( )	71. 1	termanal	2	termenal	3	terminal	4 termanel
( )	72. 1	confedercy	2	confederacy	3	confedersy	4 confedericy
( )	73. 1	varieties	2	varities	3	verities	4 varietys
( )	74. 1	slauter	2	slotter	3	slaughter	4 sloter
( )	75. 1	seperator	2	separator	3	seperater	4 separater
( )	76. 1	rediculous	2	rediculas	3	rediculious	4 ridiculous
( )	77. 1	sive	2	seive	3	sieve	4 scive
( )	78. 1	luxuriant	2	luxurant	3	luxurent	4 luxurient
( )	79. 1	pnemonia	2	pneumonia	3	newmonia	4 pnewmonia
( )	80. 1	malicous	2	molicious	3	malicious	4 mulishes
( )	81. 1	crystalize	2	cristalize	3	cristlize	4 christlize
( )	82. 1	comittee	2	commity	3	committe	4 committee
( )	83. 1	amateur	2	amature	3	amiture	4 ameture
( )	84. 1	bargin	2	bargain	3	bargan	4 bargian

Directions: Answer the easiest parts first. Go back and work on the others. You will have exactly 15 minutes.

EVERY PUPIL SCHOLARSHIP CONTEST
April 4, 1930

Bureau of Educational Measurements and Standards
Kansas State Teachers College, Emporia

SPELLING

By W. H. Gray,
K. S. T. C., Emporia, Kansas.

76
TOTAL NUMBER POINTS

Name Helen Page Town Lincoln

School Lincoln Jr. High Age 12 Grade 8th

Teacher Miss Rose State Kansas Date April 4

DIRECTIONS: In each row across the page you will find four spellings of the same word. Only one of these is correct. Find the correct one and place the number before this word in the parenthesis at the left.

Example: (2) 1. gril 2. girl 3. gurl 4. girll

In this example the second word is the one spelled correctly. Hence the figure "2" has been placed in the parenthesis. Do all of the rows the same way. You will have exactly 15 minutes.

(1)	1.	1 several	2 severl	3 severel	4 sevral
(2)	2.	1 seperate	2 separate	3 seprate	4 seperrate
(2)	3.	1 enuf	2 enough	3 enought	4 enofe
(4)	4.	1 sissors	2 sissers	3 sisers	4 scissors
(4)	5.	1 sirpluse	2 serplus	3 sirplus	4 surplus
(1)	6.	1 library	2 libery	3 libray	4 libary
(2)	7.	1 lettas	2 lettuce	3 lettus	4 lettes
(2)	8.	1 gipsy	2 gypsy	3 gipsey	4 jipsy
(2)	9.	1 gose	2 gauze	3 gause	4 goze
(1)	10.	1 electric	2 electrict	3 electrick	4 eletric
(4)	11.	1 funnyest	2 funnest	3 funest	4 funniest
(2)	12.	1 enginear	2 engineer	3 enginer	4 enginere
(1)	13.	1 magazine	2 magzine	3 magazen	4 magizene
(2)	14.	1 develp	2 develope	3 develup	4 develop
(1)	15.	1 estimate	2 estmate	3 estamate	4 estemate
(1)	16.	1 biscuit	2 bisket	3 biscut	4 biskut
(2)	17.	1 beleave	2 believe	3 belive	4 beleve
(3)	18.	1 certen	2 surten	3 certain	4 sertan
(4)	19.	1 appitite	2 apatite	3 apitite	4 appetite
(1)	20.	1 telegram	2 telagram	3 tellagram	4 tellgram
(2)	21.	1 cabbeg	2 cabage	3 cabbage	4 cabbige
(2)	22.	1 bilding	2 building	3 bulding	4 biulding
(2)	23.	1 autum	2 autumn	3 autom	4 auttum
(2)	24.	1 menchen	2 menchin	3 mention	4 menshion
(2)	25.	1 ake	2 ache	3 acke	4 ach
(1)	26.	1 balloon	2 bloon	3 ballon	4 bollon
(1)	27.	1 complete	2 compleat	3 complet	4 comeplet
(1)	28.	1 pumpkin	2 punkin	3 pumkin	4 punken
(2)	29.	1 dominos	2 dominoes	3 domanoes	4 domonoes
(2)	30.	1 mollasses	2 molaces	3 molases	4 molasses
(2)	31.	1 decendent	2 descendant	3 desendent	4 decendant
(1)	32.	1 decorate	2 decrate	3 deckorate	4 decarate
(2)	33.	1 sertenly	2 certainly	3 certenly	4 certanly

(4)	34.	1	manafacturing	2	manufactering	3	manufactoring	4 manufacturing
(1)	35.	1	cemetery	2	cemetary	3	cematary	4 sematary
(2)	36.	1	sufishent	2	sufficent	3	safishent	4 sufficient
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