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## Comparative Results Obtained From Instructional Procedures Used In Arithmetic On A Select Group Of Pupils At Carver Elementary School Bryan, Texas

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COMPARATIVE RESULTS OBTAINED FROM INSTRUCTIONAL PROCEDURES  
USED IN ARITHMETIC ON A SELECT GROUP OF PUPILS AT  
CARVER ELEMENTARY SCHOOL, BRYAN, TEXAS



DORIS EDWIN SCURRY

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COMPARATIVE RESULTS OBTAINED FROM INSTRUCTIONAL PROCEDURES  
USED IN ARITHMETIC ON A SELECT GROUP OF PUPILS AT  
CARVER ELEMENTARY SCHOOL  
BRYAN, TEXAS

A Thesis

Presented to the Graduate Division of  
Prairie View Agricultural and Mechanical College  
Prairie View, Texas

In Partial Fulfillment of the  
Requirements for the Degree  
of  
Master of Science in Education

by  
Doris Edwin Scurry  
August 1959

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Prairie View, Texas

This thesis for the Master of Science degree, by  
Doris Edwin Scurry, has been approved by

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DEDICATIONS

To my mother, Mabel Starnes, and my husband, Claude,  
this paper is respectfully dedicated.

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Date

ACKNOWLEDGEMENTS

The writer wishes to express her gratitude and thanks to Mr. Carl C. Weems, for his patience, guidance and encouragement. To my mother, Mabel Stearne, and my husband, Claude, this paper is respectfully dedicated. Gibson for advice and kindness; to Dr. J. W. Echols for invaluable assistance; to Mr. Sam Davis for constructive suggestions and friendliness and to Dr. J. E. Drew for his kind considerations.

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### I. THE PROBLEM

Statement of the Problem. The purpose of this study is (1) to review the literature in order to compare the purposes of the traditional program with those of the modernistic philosophy; (2) consider both the suggested procedures for teaching arithmetic as recommended by the traditionalists, and those considered most valuable by the modernists; and, (3) by comparing the results of instruction of a group of students in arithmetic by both the traditionalists and modernistic methods, suggest procedures which should be followed in an effective arithmetic instructional program.

Importance of the Study. To justify effective instructional procedures would seem to indicate the need for

## CHAPTER I

justifying education. Modern American educators have re-

peatedly THE PROBLEM AND DEFINITIONS OF TERMS USED developing all children to their fullest extent. It would seem

little question seems to exist in regard to the values inherent in education for individuals. However, many differences of opinions seem to exist as to how or by what

means educators should proceed in providing the proper educational experiences. The traditionalists are of the same

opinion that emphasizing subject matter in an atmosphere of rigid disciplinarianism is the best method while the modernists suggest a life centered approach designed to provide

for the individual differences which exist in children.

The procedures concerned with in regard to the teaching of arithmetic are those which appear to be operative at

Statement of the Problem. The purpose of this study is (1) to review the literature in order to compare the purposes of the traditional program with those of the modernistic philosophy; (2) consider both the suggested procedures for teaching arithmetic as recommended by the traditionalists, and those considered most valuable by the modernists; and, (3) by comparing the results of instruction of a group of students in arithmetic by both the traditionalists and modernistic methods, suggest procedures which should be followed in an effective arithmetic instructional program.

the elementary level.

Importance of the Study. To justify effective instructional procedures would seem to indicate the need for justifying education. Modern American educators have repeatedly insisted upon the need and the purpose for developing all children to their fullest extent. It would seem that this purpose alone would justify the interest in the most effective educational procedures possible.

However, in the world in which we live, where two major ideologies are vying for leadership, in order for democracy to survive, all citizens must be effectively and efficiently developed so that they may contribute their share toward the preservation of our democratic way of life.

## II. SCOPE OF THE STUDY

The procedures concerned with in regard to the teaching of arithmetic are those which appear to be operative at the elementary level.

## III. DEFINITIONS OF TERMS

Procedure. Procedure is designed to mean a special course of action, performance, and execution. Procedure is concerned with the manner of proceeding or acting, or conducting a class.

Traditional. Throughout the report of this investigation, the term "traditional" shall be interpreted as meaning the practices, customs and doctrines handed down from

generation to generation. Traditional practices are often uncertain and ancient.

## CHAPTER II

Modern. Modern was interpreted as meaning the views and practices of the present or recent period and not ancient. Practices that have been planned and experienced by educators, or methods recommended by the modernistic educational philosophers.

Modernistic. Throughout the report of this investigation, the term "modernistic" shall be used as an adjective that describes or speaks of the modern view and practices. One hundred years ago the teachers of the United States, from one-room rural schools to college lecture rooms, were concerned almost exclusively with the imparting of verbal and numerical skills. The skills and information

Traditionalist. Traditionalist was an adjective that describes the traditional practices and often the person that follows the traditional procedures. Much of the traditional point of view in reference to the elementary and in the secondary school, might be characterized as the subject-matter has been taught for its own sake, or its own sake.

Modernist. Modernist was interpreted as the person practicing the modernistic procedures.

Kerlinger reports of a study made in which purposes were to test a theory of educational attitudes toward education. These findings indicated that the most highly saturated items of traditional attitudes were:

<sup>1</sup>George E. Myers, Principles and Techniques of Vocational Guidance (New York: McGraw-Hill Book Company, Inc., 1941), p. 11.

<sup>2</sup>Gerald S. Craig, Science For The Elementary School Teacher (New York: Ginn and Company, 1947), p. 3.

Schools of today are neglecting the three R's. Children need and should have more supervision and discipline than they usually get.<sup>3</sup>

CHAPTER II

A COMPARISON OF THE PURPOSES OF MODERNISTIC AND TRADITIONAL EDUCATION

I. THE TRADITIONAL PROGRAM

One hundred years ago the teachers of the United States, from one-room rural schools to college lecture rooms, were concerned almost exclusively with the imparting of verbal and numerical skills. The skills and information were taught as ends in themselves.<sup>1</sup> Craig said that:

Much of the traditional point of view in reference to the content fields, both in the elementary and in the secondary school, might be characterized as the subject-matter-mastery point of view. In this subject matter has been taught for its own sake, or its own ends.<sup>2</sup>

Kerlinger reports of a study made in which purposes were to test a theory of educational attitudes toward education. These findings indicated that the most highly saturated items of traditional attitudes were:

<sup>3</sup>Fred N. Kerlinger, "Progressivism and Traditionalism Basic Educational Attitudes," The School Review, LXVII (Spring 1941), p. 11.

<sup>1</sup>George E. Myers, Principles and Techniques of Vocational Guidance (New York: McGraw-Hill Book Company, Inc., 1941), p. 11.

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<sup>3</sup>William H. Burton and Leo J. Brueckner, Supervision A Social Process (New York: Appleton-Century-Crofts, Inc., 1955), p. 47.

Schools of today are neglecting the three R's. Children need and should have more supervision and discipline than they usually get.<sup>3</sup>

Far too many people in America, both in and out of education, look upon the elementary school as a place to learn reading, writing, and arithmetic. These were the only purposes of the elementary school during the frontier days of our country.<sup>4</sup>

Burton and Bruckner, in speaking of the traditionalist position on the aims of education, state:

Education until the beginning of modern times was dominated by society in which the educational system developed. The objective was to produce an individual who would fit into the society as it existed. The capacities, desires, or interests of individuals could not be wholly overlooked, but they were not important in determining the aim or content of education. The aim was stated clearly as preparation for adult life as then lived.<sup>5</sup>

Saucier reports of some of the misconceptions about the child being a miniature adult. He states:

Among the distorted views of the child is that he is essentially a miniature adult. This view was more evident in the preceding centuries than in the present one. It was especially noticeable in France at the

## II. THE MODERNISTIC PROGRAM

<sup>3</sup>Fred N. Kerlinger, "Progressivism and Traditionalism Basic Educational Attitudes," The School Review, LXVII (Spring 1958), p. 81.

<sup>4</sup>Organizing the Elementary School for Living and Learning, 1947 Yearbook, Association For Supervision and Curriculum Development of the National Education Association, Washington, D. C., p. 3.

<sup>5</sup>William H. Burton and Leo J. Brueckner, Supervision A Social Process (New York: Appleton-Century-Crofts, Inc., 1955), p. 47.

time of the French Revolution, when children were dressed as adults and trained in the manners of adults. It showed itself also among the Puritans of New England, who tended to frown on the frivolity and play of children. That it exists to some extent today can be seen in the undue disturbance of adults at children's frankness of speech, clumsiness of movement, and errors in reasoning.<sup>6</sup>

Such a view of the child has been reflected in several ways in the elementary school. Frequently he has been expected to maintain the stillness of an adult over a long period of time. Usually, too, he has been given subject matter selected and organized solely by the adult and has been expected to master it according to the adult level of attainment. Further, he has often been told that the reward for his aimless and meaningless schoolwork will be received in the distant future when he has need for it. Thus the teacher, in not fully appreciating the immaturity and inexperience of children, has placed on them many unreasonable and hurtful requirements and has failed to sympathize with them in the resulting delinquencies.<sup>7</sup>

## II. THE MODERNISTIC PROGRAM

After 1920, the new science of psychology and new knowledge in other fields threw more light on the problems of educating children. Modern purposes tend to place great

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<sup>6</sup>W. A. Saucier, Theory and Practice In the Elementary School (New York: The Macmillan Company, 1951), pp. 1-2.

<sup>7</sup>Ibid.

Kerlinger, op. cit., p. 82.

emphasis on the individual differences in children and on the variations in the abilities of the individual child. Planning with the children, they devised activities and experiences intended to be interesting to them and conducive to learning not only the fundamental facts and skills, but also the basic social skills involved in democratic group living and the individual behaviors involved in moral-ethical behavior.<sup>8</sup>

Craig reports that,

Possibly the most persistent factor operating to influence the objectives in the curriculum today is the growing insistence that objectives are valuable only in so far as it meets the need of the child and of society.<sup>9</sup>

In a study made by Kerlinger, he discovered that the laymen more or less followed the traditional attitudes toward education, On the other hand, the educators followed the modern attitudes toward education.

The educators stated the attitudinal facts as summarized by Kerlinger:

Education is not so much imparting knowledge as it is encouraging and prompting the child to use his potentialities for learning.

True discipline springs from interest, motivation and involvement in live problems.<sup>10</sup>

Burton and Bruckner write:

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<sup>8</sup>Nolan C. Kearney, Elementary School Objectives (New York: Russell Sage Foundation, 1953), p. 128.

<sup>9</sup>Craig, loc. cit.

<sup>10</sup>Kerlinger, op. cit., p. 82.



Klausmeir, et al., in discussing the matter have

The individual-centered (child centered) view arose within this century. Its objective was the production of the best possible individual personalities. Aim and content of education were both derived from the experience, the needs, interests, and capacities of the individual. Individual success and social improvements via the efforts of well-educated individuals were both within the thought of the leaders of this view. Preparation for adult life would be cared for through progressive growth at all ages toward maturity. Freedom and permissiveness were prominent. The content was anything in the real life of the learner which would further his growth and development.<sup>11</sup>

The value of the individual-centered aim was that it was based squarely upon valid facts about individuals and how they learn. Individual differences were recognized as basic. The moral principle that children are persons in their own right and entitled to status and treatment as such was basic to the position.<sup>12</sup>

In discussing the modernistic point of view Saucier reports that:

Modern child psychologists point out repeatedly both the possibility and necessity of adults beginning early in the life of the child to develop in him wholesome attitudes and appreciations and sound habits of application and thinking. Beginning in the first grade, the pupil in the elementary school should be taught as a whole-individual. His personality should be continuously integrated. Knowledge and skills should be learned in connection with appreciating, thinking, and doing.<sup>13</sup>

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<sup>11</sup>Burton and Bruckner, op. cit., pp. 47-48.

<sup>12</sup>Ibid. J. Klausmeir, et al., Teaching In The Elementary School (New York: Harper & Brothers, 1956), p. 9.

<sup>13</sup>Saucier, op. cit., p. 129.

Klausmeir, et al., in discussing the matter have inferred that:

Although both teaching and learning take place by and among groups of children, cognizance is taken of the fact that learning is a highly individual and personal matter or experience. Good teachers exert marked effort to provide for both similarities and differences which are found in boys and girls in elementary classrooms. Discovery by oneself for each pupil is the goal of every truly professional teacher.<sup>14</sup>

The elementary school is undergoing conspicuous changes, notably in teacher-pupil and school community relationships and in the evolution of the curriculum that is in progress.

Craig is of the opinion that:

Not only is new subject matter emerging, but a new type of thinking relative to the function and the nature of the content has made significant inroads upon the traditional program. . . . Possibly the most persistent factor operating to influence the content in the curriculum today is the growing insistence that content is valuable only in so far as it meets the need of the child and of society.<sup>15</sup>

Yoakam and Simpson believe that the purposes of education should not only be prepared for educating children for their place in the adult world but their present life.

They state:

The view of education as preparation for adult life prevailed for a long period. Recently it has been changing under the influence of a democratic philosophy of

<sup>14</sup>Herbert J. Klausmeir, et al., Teaching In The Elementary School (New York: Harper & Brothers, 1956), p. 9.

<sup>15</sup>Craig, op. cit., p. 1.

education which insists that education is not merely preparation for adult life and that the best type of education for the young is that which best meets their needs at each particular stage of their development. This philosophy also insists that the child must be active in learning and that the time honored principle of "pouring in" information and repressing the childish impulses to action is fundamentally wrong. The modern program places emphasis upon activities meaningful to the child here and now.<sup>16</sup>

Burton and Bruckner are of the opinion that the purpose of education is preparation for life. But not only for adult life but for the life of the pupil now. They state that:

We know now that the child grows though achieving ever increasing levels of maturity, of insight, of skill. By progressing through a series of learning experiences geared to his level of maturity, he grows naturally into the adult level. The meanings, behavior patterns, simply less mature forms of the ones he will use as an adult. . . . Thus a balance between immediate purposes (felt needs) and remote purposes is achieved functionally.<sup>17</sup>

Ritter and Shepherd have pointed out that the function of the school is to provide experiences for children that contribute to a happy real life and growth individually, in their school group, in their communities, in their nation, and in their world.<sup>18</sup>

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<sup>16</sup>Gerald A Yoakam and Robert G. Simpson, Modern Methods and Techniques of Teaching (New York: The Macmillan Company, 1945), p. 6.

<sup>17</sup>Burton and Bruckner, op. cit., p. 49.

<sup>18</sup>E. L. Ritter and L. A. Shepherd, Methods of Teaching In Town and Rural Schools (New York: The Dryden Press, 1950), p. 2.

- 2. Narrow range of experience with drill dominant.
- 3. Adult response expected at very early stage of learning.

CHAPTER III

A COMPARISON OF MODERN AND TRADITIONAL

INSTRUCTIONAL PROCEDURES

IN ARITHMETIC

I. TRADITIONAL INSTRUCTIONAL PROCEDURES

In recent years, important studies of the learning process and of child development have revealed the limitations of traditional instructional procedures in arithmetic. The evident contrast between the procedures in these two programs grow out of fundamental differences of opinion as to (1) the content and objectives of arithmetic, (2) the nature of the learning process, and (3) methods of organizing and directing classroom activities.

The traditional procedures of organizing and directing classroom activities, according to Brueckner and Grossnickle, are summarized as follows:

A. The Curriculum and Objectives

- 1. Limited subject curriculum emphasizing mastery of subject matter, largely abstract in nature.
- 2. Preparation for future work.
- 3. Emphasis on computational skills

B. Traditional Psychological Principles Underlying Instruction

Yoakam and Simpson, *op. cit.*, pp. 177, 256-57.

2. Narrow range or experience with drills in conventional dominant.
3. Adult response expected at very early stage of learning.
4. Subject matter taught as isolated unrelated items and skills.
5. Learning regarded as largely a repetitive process.
6. Narrow skills developed as set patterns of response.
7. Extrinsic motives, such as penalties, marks, rewards.

### C. Organization of Instructional and Materials

1. Teacher arbitrarily assigns all class activities.
2. Little if any recognition of individual differences in needs and ability.
3. Content of instruction based largely on textbook and drill materials.
4. Materials used of a highly academic type.
5. Set, inflexible blocks of time scheduled.
6. No definite plan of diagnosis of difficulties.

In discussing the traditional procedure Yoakam states:

The traditional assignment originated in the traditional school in which often a great deal of lesson-hearing was done and very little teaching. Children were assigned impossible tasks and little thought was given to the problem of making it possible for them to perform the tasks. No thought was given to pupil participation in planning and little stimulation to thinking ever occurred.

Yoakam and Simpson also state that:

<sup>1</sup>Bruckner and Grossnickle, How To Make Arithmetic Meaningful (Philadelphia: The John C. Winston Company, 1947), p. 21.

<sup>2</sup>Yoakam and Simpson, op. cit., pp. 177, 256-57.

<sup>3</sup>John R. Clark and Associates, Growth In Arithmetic (New York: The World Book Company, 1956), p. 3.

Drill is one of the most widely used procedures in conventional schools. . . . To many teachers, it is mere repetition of an act to attain perfection in a performance, irrespective of the needs and interests of children and the goal and standards of school achievement. This conception of drill is one of the chief causes for the many abuses and misuses of teaching facts, habits, and skills. Experimental practice furnishes objective evidence of the ineffectiveness of the drill procedure as formerly employed.<sup>3</sup>

Lee and Lee support the previous statement of teaching procedures by indicating that:

The arithmetic program of the past consisted of a hierarchy of skills and abilities built one upon another.

Memory, pictures only too vividly, teachers in our experiences who neglected to think of us as humans.<sup>4</sup>

Clark, and his associates, summarize the traditional program in the following manner:

Arithmetic content as being taught as facts, skills and habits of procedure.

Emphasis in classroom teaching oral and written drill to mechanize computational procedures.

Thought processes utilized by pupil memory chiefly.

Basic for evaluating pupil progress rate and accuracy in computation and problem solving.<sup>5</sup>

The limitations of the traditional drill program with its narrow objectives and formalized methods of instruction have been stated by Brownell as follows:

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<sup>3</sup>Ibid.

<sup>4</sup>Lee and Lee, op. cit., p. 343.

<sup>5</sup>John R. Clark and Associates, Growth In Arithmetic (New York: The World Book Company, 1956), p. 3.

One of the greatest fallacies of the elementary curriculum is to classify arithmetic as a skill or a drill or tool subject. When arithmetic is viewed in these terms, and is taught accordingly, the results are just what we have been getting for the last decades, arithmetical incompetence. The teaching process, according to the tool conception of arithmetic, undertakes to tell children what to do, (but not why to do it) and then, by ceaseless drill, to have them to do it until they can demonstrate some degree of mastery. After that, heavy programs of maintenance are organized to keep skills alive.<sup>6</sup>

## II. MODERN INSTRUCTIONAL PROCEDURES

### IN ARITHMETIC

The purposes of education as discussed in Chapter II have changed considerably instructional procedures. Children are persons, individuals, human beings. This is not a new idea but it has emerged as the key-note of our present educational philosophy. More than lip service must be given to the fact that the child is an individual; teaching procedures must take cognizance of the fact.

Lee and Lee state that:

If pupils are to be more effective in meeting situations involving social relations, they are going to have experience in meeting situations. The teaching procedure must supply such opportunities.

There is no magical formula or mystic short cut for good teaching. . . . In the new program the teacher should be master of the information to be taught. In addition, the teacher needs to know and consider children - their interests, the way they develop, the way

1. Discovery of meanings and procedures.

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<sup>6</sup>W. A. Brownell, "When Is Arithmetic Meaningful?" Journal of Educational Research, 38:481.

<sup>8</sup>Brownell, op. cit., p. 490.

2. Wide variety of meaningful applications they learn, and their outlooks and desires. Adaptations which have taken place in teaching procedures have been the result of more understanding and consideration of the child.<sup>7</sup>

Brownell summarizes the values of the modern program, with its emphasis on number meaning and social uses of arithmetic, in the following statement:

Arithmetic, properly conceived, is not a tool or a drill subject. Of course, proficiency is necessary-- everyone agrees that this is so; but more than proficiency, speed and correctness in computation is demanded by the conditions of life. In practical living we must be intelligent in quantitative situations. Mechanical skills may be employed in situations which are wholly familiar. To the degree that situations differ from the completely familiar, we must be able to think and one does not think effectively with mechanical skills alone. Thinking is possible only to him who possess rich meanings. One is sensitive to subtle aspects of situations which escape the possessor of mechanical skills alone. For many, many years we have been told that skills can be used intelligently only when they are acquired intelligently. This is the importance of meanings in arithmetic.<sup>8</sup>

Brueckner and Grossnickle have outlined modern procedures as follows:

A. Curriculum and Objectives

1. Rich experience units dealing with broad areas planned to lead to well-rounded development.
2. Reconstructing and making present experience vivid and meaningful.
3. Stress on social uses of mathematical procedures plus computational skills.

B. Psychological Principles Underlying Instruction

1. Discovery of meanings and procedures.

---

<sup>7</sup>Lee and Lee, op. cit., p. 343.

<sup>8</sup>Brownell, op. cit., p. 490.



2. Wide variety of meaningful applications and procedures to develop understanding and skill.
3. Gradual directed growth from immature to mature levels recognized as normal procedure.
4. Relations between elements systematically developed to facilitate organization of ideas.
5. Insight and meaning regarded as basic to to learning.
6. Resourcefulness and ingenuity in use of numbers developed.
7. Intrinsic motives, as felt needs, wants, desire to learn.

#### C. Organization of Instruction and Materials

1. Pupil cooperation sought in the planning and selection of activities.
2. Instruction adapted to needs, interests and abilities of pupils.<sup>9</sup>

Yoakam and Simpson point out another important procedure for the modern teacher in addition to those discussed previously. They are as follows:

The modern teacher is no longer satisfied with hit-or-miss methods of doing things. He desires to be a specialist as well as a general practitioner. Hunches and guesses are not effective means of disclosing weakness and deficiencies in learning. More accurate devices are necessary for diagnostic purposes than for mere observation. It is doubtful that any teaching procedure serves so definitely to establish fundamental habits of work and study as does diagnostic teaching. It makes pupils conscious of their weaknesses and of the necessity of being on the alert for their mistakes. It represents a scientific way to go about uncovering incorrect forms of study activity. Diagnostic teaching reduces the number of special problem cases to a minimum, prevents the development of ineffective habits of work, and at the same time develops a wholesome attitude among pupils toward their schoolwork.<sup>10</sup>

<sup>9</sup>Bruckner and Grossnickle, loc. cit.

<sup>10</sup>Yoakam and Simpson, op. cit., p. 239.

Clark summarizes the modern procedures in the following chart:<sup>12</sup>

Area	The Modern Program
Arithmetic content	Thought to emphasize meanings, principles, and relationships. Facts and skills developed after understanding.
Emphasis in classroom teaching	Experiences leading to discovery of principles. Symbols introduced as records of experience. Algorithms evolved from developmental experiences. Drill for computational competence follows understanding.
Memory chiefly	Generalizations of experience. Identifications and reproduction of groupings. Analysis, comparison, estimation, evaluation, interpretation, etc.
Rate and accuracy in computation and problem solving	Maturity (quality) of performance. Flexibility of thought process. Ability to use number relationships in attacking quantitative situations.

The acceptance of the fact that each child should become increasingly effective in meeting situations, both in the present and in the future, should provide points of view and a criterion for the determination of arithmetic

<sup>12</sup>Clark, loc. cit.

experiences. The implication is, therefore, that the purpose of arithmetic is to develop the ability of the pupil to think quantitatively in the situations which he meets.<sup>13</sup>

It is the obligation of the school to develop the present generation of children individually and collectively to function efficiently in the activities of the democracy and the world in which they live.<sup>14</sup>

Hildreth is of the opinion that:

No normal person gets along very well in civilized society without some arithmetic computation and reasoning skill. Without ordinary skill in arithmetic, he may be cheated in getting change at the market, or he may cheat some one in paying his laundry bill, and his miscalculations may in other ways be practically disadvantageous. . . .

The modern aim in arithmetic teaching is prompt and accurate solution of practical problems such as the average person encounters in his daily affairs. . . .

Constructive changes are rapidly taking place in the arithmetic programs, materials, and teaching practices. One of the most striking and fundamental changes in arithmetic practice in modern as contrasted with traditional schools is the following:

More real and functional purposes underlie the modern arithmetic curriculum. There is less teaching of some obscure fact or principle to enable children to pass an examination, and more arithmetic that enables children to meet the practical number of situations of daily life with ease and accuracy.<sup>15</sup>

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<sup>13</sup>Lee and Lee, loc. cit.

<sup>14</sup>E. L. Ritter and L. A. Shepherd, Methods of Teaching in Town and Rural Schools, (New York: The Dryden Press, 1950), p. 2.

<sup>15</sup>Gertrude Hildreth, Learning The Three R's (Minneapolis: Educational Publishers, Inc., 1938), pp. 156-157.

CHAPTER IV  
THE FOURTH GRADE ARITHMETIC ACHIEVEMENT  
TEST SCORES OF THE SAMPLING

A COMPARATIVE ANALYSIS OF ARITHMETIC

ACHIEVEMENT TEST RESULTS OF

A SELECT GROUP

Name	Fundamentals	Average
Carl	4.5	4.6
Bonny	4.7	4.3
Clarence	4.5	4.6
Lawyer	4.2	4.6
Kenn	4.4	4.2
Bennie	3.7	4.2
Rena	4.2	4.3
William	4.5	4.0
Willie	4.9	4.8
Hobby	3.4	4.3
Robbie	4.1	4.3
John	4.1	4.3
Walter	4.4	4.3

In order to compare the relative effects of two different general instructional methods, twenty-seven children were selected where records were sufficiently complete to indicate their achievement test scores from the fourth grade through the sixth, on the California Achievement Test, Form BB.

A review of the achievement test scores for this group indicated that, upon the completion of grade four, the highest grade placement for the group was 5.9 and the lowest was 3.4 with an average 4.7 (see Table I).

In order to make the necessary comparison of instructional procedures, the group was instructed on the fifth grade level by a teacher who followed traditional procedures. The precise procedures utilized are outlined below.

The procedure followed was that of having two instructors teach a group of children in two strikingly contrasting manners. The group of children were taught at the fifth grade level in what might be called the traditional manner.

While the modernistic approach was utilized on the sixth grade level, the traditional instructional procedure was used on the fourth grade level.

**TABLE I**  
**THE FOURTH GRADE ARITHMETIC ACHIEVEMENT**  
**TEST SCORES OF THE SAMPLING**

THE TRADITIONAL INSTRUCTIONAL

Name	Arithmetic Reasoning	Fundamentals	Average
Carl	4.5	4.7	4.6
Dorothy	4.1	4.5	4.3
Carrol	4.7	4.9	4.8
Clarence	4.3	4.8	4.6
David	5.7	5.4	5.5
Lawyer	4.2	4.9	4.6
Wayman	2.6	3.8	3.4
Emma	4.4	4.9	4.7
Tilda	4.8	5.4	5.2
Bennie	3.7	3.8	3.8
Albert	6.2	5.8	5.9
Rena	4.1	4.9	4.5
Jeril	4.5	5.4	5.0
William	4.5	4.6	4.6
Roy	3.8	4.6	4.2
Willie	4.9	4.9	4.9
Peggy	3.7	4.8	4.3
Mary	3.6	5.2	4.4
John	4.7	5.0	4.9
Bobby	5.2	5.6	5.5
Carolyn	5.4	5.5	5.5
Robbie	4.1	5.0	4.6
Johnnie	4.2	6.2	5.2
Helen	4.1	5.0	4.6
Johnny	4.4	5.2	4.8
Walter	4.4	4.8	4.6
Vernia	4.2	5.0	4.6

The traditional instructional procedure utilized in the selection of the group included following the textbook allowance individual differences in the learning of how numbers they were learning in their daily life.

The teacher presented the group with unrelated problems to be solved by direct and other tentative methods. She provided of drill activities intended to establish quickness, even allowed the children to count the fingers little attention given to the students interests and abilities of the individual assignments were given to all children.

The materials used abstract and not concrete and unrelated to the experiences of the pupils.

The teacher more or less determined the nature of the activities, with very little consideration of differences among the individuals and as stated previously on the basis of the arrangement of subject matter in the course of study and textbook.

The classroom work in arithmetic was limited to a block of time set aside for arithmetic instruction and no

While the modernistic approach was utilized on the sixth grade level after promotion from the fifth grade.

THE TRADITIONAL INSTRUCTIONAL  
PROCEDURES UTILIZED

The traditional instructional procedure utilized in the instruction of the group included following the text book without any allowance for individual differences or consideration of how number facts they were learning function in daily life.

The teacher presented the group with unrelated facts to be learned by direct and authoritative methods. She provided a number of drill activities intended to establish quick response, even allowed the children to count their fingers. Little attention was given to the needs interests and abilities of the individual. Assignments were given to all of the children.

The materials used were abstract and not concrete and unrelated to the experiences of the pupils.

The teacher, more or less, determined the nature of the activities, with very little consideration of differences among the individuals and as stated previously on the basis of the arrangement of subject matter in the course of study and textbook.

The classroom work in arithmetic was limited to a block of time set aside for arithmetic instruction and no

attempt was made to bring out possible interrelationships between the various curriculum areas.

Through drill, she would have the pupil practicing blindly on the addition facts or combinations. They would practice just as hard on combinations that they knew as on those that they did not know. Their practice was unintelligent nonpurposeful, and wasteful. Such practice is bad and defeats the very purpose for which it should be used.

When lessons were assigned to the pupil, they were merely assigned a page or several pages at a time. Often it would be said "take the next lesson", or "take the next page or exercise."

This method of making an assignment was given by the teacher without much consideration of the pupil. For the most part, lessons were not interesting, lacked definitions clarity, stimulation and direction.

The pupil would memorize the facts to be learned without any considerations as to the meaning or relationship with other experiences.

#### The Results of Traditional Arithmetic Instruction.

Upon the completion of the fifth grade, the children were retested with the California Achievement test in the area of arithmetic reasoning and arithmetic fundamentals. As the result of the retests, it was found that the highest achievement level was 7.3 and the lowest 3.8 with an average grade level of 5.3 (see Table II).

In order to determine the average amount of growth of the group as the result of the instructions by the traditional method, the scores were compared with the fourth grade achievement test scores.

TABLE II

THE ARITHMETIC ACHIEVEMENT TEST RESULTS OF THE GROUP AT THE END OF THE FIFTH GRADE

Name	Arithmetic Reasoning	Arithmetic Fundamentals	Average
Carl	5.9	5.6	5.7
Dorothy	6.9	5.7	6.0
Carrol	4.4	5.7	5.3
Clarence	6.2	7.1	6.9
David	6.4	6.0	6.2
Lawyer	4.8	5.0	4.9
Wayman	4.0	4.8	4.4
Emma	4.9	5.5	5.3
Tilda	4.8	5.7	5.5
Bennie	4.1	3.3	3.7
Albert	6.4	6.0	6.2
Rena	5.0	5.4	5.2
Jeril	5.5	5.7	5.6
William	3.5	4.1	3.8
Roy	4.5	4.3	4.4
Willie	5.9	5.4	5.5
Peggy	4.8	5.6	5.3
Mary	5.5	4.3	4.8
John	4.9	4.7	4.8
Bobby	6.7	5.4	5.8
Carolyn	6.2	7.6	7.3
Robbie	5.0	5.4	5.2
Johnnie	5.2	5.2	5.2
Helen	5.4	5.5	5.5
Johnny	4.5	5.4	5.0
Walter	4.3	3.8	4.1
Vernia	5.2	5.6	5.5
Total Average			5.3

Pupil Tests of Basic Skills Test D: Basic Arithmetic Skills  
 Form L, Advanced Battery - Grades 5, 6, 7, 8, 9. This procedure was utilized to discover where the children were and try to begin the learning activities at that point.



In order to determine the average amount of growth of the group as the result of the instructions by the traditional method, the fifth grade achievement test scores were compared with the fourth grade achievement test scores. As the result of this comparison, it was found that the highest grade increase of .6 grades (see Table III).

II. THE MODERNISTIC PROCEDURES EMPLOYED  
FOR INSTRUCTION

This group consisted of the same pupils from the fifth grade in which the traditional procedures were utilized. At the sixth grade level the modernistic approach was utilized. As many procedures as possible were utilized that might stimulate learning.

At the beginning of the semester a readiness program was planned to determine if the pupils were ready for sixth grade and to provide experiences that would build a background for this grade. During this period, the teacher secured the California Achievement Tests, given at the end of the fifth grades to aid in discovering each child's level of achievement. She also administered the Iowa Every-Pupil Tests of Basic Skills Test D: Basic Arithmetic Skills Form L, Advanced Battery - Grades 5,6,7,8, 9. This procedure was utilized to discover where the children were and try to begin the learning activities at that point.

In the classroom the children were grouped socially.

However, during the arithmetic class the children were

grouped according to their difficulties as a guide for pupils to study intelligently. The fifth grade instruction was given and regrouped as they were able to solve their difficulties.

TABLE III

THE GRADE INCREASE OF THE GROUP AFTER  
THE FIFTH GRADE INSTRUCTION

Name	4th Grade Average	5th Grade Average	Grade Increase
Carl	4.6	5.7	1.1
Dorothy	4.3	6.0	1.7
Carrol	4.8	5.3	.5
Clarence	4.6	6.9	2.3
David	5.5	6.2	.7
Lawyer	4.6	4.9	.3
Wayman	3.4	4.4	1.0
Emma	4.7	5.3	.6
Tilda	5.2	5.5	.3
Bennie	3.8	3.7	0
Albert	5.9	6.2	.3
Rena	4.5	5.2	.7
Jeril	5.0	5.6	.6
William	4.6	3.8	0
Roy	4.2	4.4	.2
Willie	4.9	5.5	.6
Peggy	4.3	5.3	1.0
Mary	4.4	4.8	.4
John	4.9	4.8	0
Bobby	5.5	5.8	.3
Carolyn	5.5	7.3	1.8
Robbie	4.6	5.2	.6
Johnnie	5.2	5.2	0
Helen	4.6	5.5	.9
Johnny	4.8	5.0	.2
Walter	4.6	4.1	0
Vernia	4.6	5.5	.9
Total	4.7	5.3	.6

practice work on his level of achievement or needs.

Instructional materials, such as films, charts, weather reports, time and bus schedules, and many more were used in the arithmetic program.

In the classroom the children were grouped socially. However, during the arithmetic class the children were grouped according to their difficulties as a guide for pupils to study intelligently. The pupils were grouped and regrouped as they were able to solve their difficulties.

The group which mastered the previous work was given more challenging problems. While a group of slower learners were not able to solve the more complicated problems.

An attempt was made to assist the pupils see inter-relationships between the processes being learned, such as between addition and multiplication; he was encouraged to make discoveries and to see new relationships; he was led to transfer what he had learned previously to the new materials and to new situations; he was also taught to try to increase the efficiency of his methods of work.

The book, "Testing Growth in Problem Solving and Arithmetic Processes", by Leo J. Brueckner were provided for helping the pupils to locate his difficulties and weak spots. He also kept a record of his own progress in the form of a graph on the last page of the test. He rated himself according to the rating chart at the bottom of each test according to the number of problems correct.

The pupils were given assignments as more or less practice work on his level of achievement or needs.

Instructional materials, such as films, charts, weather reports, time and bus schedules, and many more were used in the arithmetic program.

Activities and experiences that would help the pupil develop to the best of his ability, speed, ease, control and precision of work were provided.

Provisions were made to make the experiences meaningful to the pupil.

Often there were times when pupils of one group would help one of the other pupils understand something that had previously not been quite so clear.

III. THE RESULTS OF INSTRUCTION USING MODERNISTIC PROCEDURES

Upon the completion of the sixth grade, the children were again tested with the arithmetic reasoning and arithmetic fundamentals section of the California Achievement Test. It was found, as the result, that the lowest grade placement was 5.5 and the highest 8.4 with an average of 7.2 (see Table IV).

For the purpose of comparing the amount of gain at the sixth grade level, as compared with the achievement at the fifth grade level, a comparison was made of the test results at the end of both the fifth and sixth grade levels. As the results of this comparison it was found that the greatest amount of gain for the sixth grade was a 3.8 grades increase and the smallest .4 grades increase with an average gain for the group of 1.3 grades (see Table V).

TABLE IV  
 THE ACHIEVEMENT TEST SCORES OF THE GROUP  
 AFTER SIXTH GRADE INSTRUCTION

Name	Arithmetic Reasoning	Arithmetic Fundamentals	Average
Carl	8.7	7.3	7.6
Dorothy	7.9	7.1	7.5
Carrol	9.7	7.0	8.4
Clarence	8.1	7.1	7.3
David	8.3	8.0	8.0
Lawyer	7.4	6.6	6.8
Wayman	6.7	6.7	6.7
Emma	6.0	6.2	6.2
Tilda	6.7	6.5	6.5
Bennie	5.4	5.6	5.6
Albert	8.7	8.2	8.4
Rena	8.1	7.0	7.2
Jeril	8.3	6.9	7.2
William	6.2	6.7	6.6
Roy	7.9	8.4	8.2
Willie	6.9	6.8	6.8
Peggy	6.5	6.2	6.3
Mary	6.7	6.2	6.4
John	7.6	5.7	6.1
Bobby	8.3	7.5	7.7
Carolyn	9.0	7.8	8.1
Robbie	7.6	6.9	7.1
Johnnie	7.2	6.5	6.6
Helen	6.9	6.5	6.6
Johnny	6.0	6.3	6.3
Walter	5.2	5.6	5.5
Vernia	8.7	7.6	8.0
Total Average			7.2

It seems reasonable to assume, as the result of these comparisons, that techniques and procedures utilized by the traditional SIXTH GRADE INSTRUCTION for the highest possible development of the group and those utilized

TABLE V

THE GRADE INCREASE OF THE GROUP AFTER  
SIXTH GRADE INSTRUCTION

Name	5th Grade Score	6th Grade Score	Grade Increase
Carl	5.7	7.6	1.9
Dorothy	6.0	7.5	1.5
Carrol	5.3	8.4	3.1
Clarence	6.9	7.3	.4
David	6.2	8.0	1.8
Lawyer	4.9	6.8	1.9
Wayman	4.4	6.7	1.3
Emma	5.3	6.2	1.9
Tilda	5.5	6.5	1.0
Bennie	3.7	5.6	1.9
Albert	6.2	8.4	2.2
Rena	5.2	7.2	2.0
Jeril	5.6	7.2	1.6
William	3.8	6.6	2.8
Roy	4.4	8.2	3.8
Willie	5.5	6.8	1.3
Peggy	5.3	6.3	1.0
Mary	4.8	6.4	1.6
John	4.8	6.1	1.3
Bobby	5.8	7.7	1.9
Carolyn	7.3	8.1	.8
Robbie	5.2	7.1	1.9
Johnnie	5.2	6.6	1.4
Helen	5.5	6.6	1.1
Johnny	5.0	6.3	1.3
Walter	4.1	5.5	1.4
Vernia	5.5	8.0	2.5
Total Average	5.3	7.2	1.9

It seems reasonable to assume, as the result of these comparisons, that techniques and procedures utilized by the traditional teacher were not adequate for the highest possible development of the group and those utilized as modernistic on the basis of results far superior.

#### SUMMARY

For years, the traditional teacher has been concerned almost exclusively with the imparting of subject matter which was taught as ends in themselves. The traditionalist position in regard to the aims of education is that the capacities, desires or interests of individuals are not important in determining the aims or content of education. The aim is often stated as preparation for adult life. That the child is essentially a miniature adult is among the distorted views of the traditionalists. Such a view of the child has been reflected in several ways in the elementary school. Frequently, he has been expected to maintain the stillness of an adult over a long period of time. Usually, too, he has been given subject matter selected and organized solely by the adult and has been expected to master it according to the adult level of attainment. Furthermore, he has been told that the reward for his aimless and meaningless schoolwork will be received in the distant future when he has need for it.

While the modern purposes tend to place great emphasis on the individual differences in children and on the variations in the abilities of the individual child.

## CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

education for the young is that which best meets their needs at each particular stage of their development.

### SUMMARY

For years, the traditional teacher has been concerned almost exclusively with the imparting of subject matter which was taught as ends in themselves. The traditionalist position in regard to the aims of education is that the capacities, desires or interests of individuals are not important in determining the aims or content of education. The aim is often stated as preparation for adult life. That the child is essentially a miniature adult is among the distorted views of the traditionalists. Such a view of the child has been reflected in several ways in the elementary school. Frequently, he has been expected to maintain the stillness of an adult over a long period of time. Usually, too, he has been given subject matter selected and organized solely by the adult and has been expected to master it according to the adult level of attainment. Furthermore, he has been told that the reward for his aimless and meaningless schoolwork will be received in the distant future when he has need for it.

for the many abuses and misuse of teaching facts, habits



While the modern purposes tend to place great emphasis on the individual differences in children and on the variations in the abilities of the individual child. Modernists believe that the best type of education for the young is that which best meets their needs at each particular stage of their development. Planning with the children, they devise activities and experiences intended to be interesting to them and conducive to learning not only the fundamental facts and skills, but also the basic social skills involved in democratic group living and the individual behavior involved in moral-ethical behavior. The most persistent factor operating to influence the objectives in the curriculum today is the growing insistence that objectives are valuable only in so far as they meet the needs of the child and of society.

The traditionist generally arbitrarily assign all class activities with little if any consideration for individual differences in needs and ability. The content of instruction is based largely on textbooks and drill with set, inflexible blocks of time scheduled. Drill is mere repetition of an act to attain perfection in a performance, irrespective of the needs and interests of children and the goal and standards of school achievement. This conception of drill is one of the chief causes for the many abuses and misuse of teaching facts, habits

and skills. No definite plan of diagnosis is usually considered. In the modern program, children are grouped socially as well as on the basis of difficulties encountered. Many experiences are provided that lead to well-rounded development. Diagnostic instruments are used to discover the difficulties, weak spots, and strengths. The pupils needs and interests are considered in selecting and providing experiences that will develop skills, and attitudes. Instructional materials such as films, charts, weather reports, time and train schedules and many more are used. The pupil kept records of their own difficulties and strengths.

In order to determine the validity of two different general instructional procedures, twenty-seven children were selected where records were sufficiently complete to indicate their achievement test scores from the fourth grade through the sixth, on the California Achievement Test, Form BB. A review of the achievement test scores for this group indicated that, upon completion of grade four, the highest grade placement for the group was 5.9 and the lowest was 3.4 with an average of 4.7. In order to make the necessary comparison of instructional procedures, the group was instructed on the fifth grade level by a teacher who followed traditional

procedures. Upon the completion of the fifth grade, the children were retested with California Achievement test in the areas of arithmetic reasoning and arithmetic fundamentals. As the result of the retest, it was found that the highest achievement level was 7.5.

In order to determine the average amount of growth of the group as the result of the instructions by the traditional method, the fifth grade achievement test scores were compared with the fourth grade achievement test scores. As the result of this comparison, it was found that the highest grade increase was 1.8 grade and the lowest, zero grades with an average increase of .6 grades.

These same pupils were taught in the sixth grade under modernistic procedures. Upon the completion of the sixth grade, the children were again tested with the arithmetic reasoning and arithmetic fundamentals section of the California Achievement Test. It was found, as the result, that the lowest grade placement was 5.5 and the highest 8.4 with an average of 7.2.

For the purpose of comparing the amount of gain at the sixth grade level, as compared with the achievement at the fifth grade level, a comparison was made of the results at the end of both fifth and sixth grade levels. As the results of this comparison it was found that the greatest amount of gain for the sixth grade

was a 3.8 grades increase and the smallest .4 grades increase with an average gain for the group of 1.3 grades.

#### CONCLUSIONS

On the basis of the data as discussed herein, the following conclusions are offered:

1. The traditional procedures of teaching do not further any of the true purposes of arithmetic.
2. They are confusing and annoying and so obviously valueless that they are detrimental to the pupils. They should be used very seldom, if ever.
3. Modern procedures that connect closely with the child's experience can and should replace the traditional procedures.
4. The modern procedures serve the purposes of arithmetic and provide opportunity for using the tool phases of arithmetic in solving real problems in business and life.

#### RECOMMENDATIONS

It is recommended:

1. That the staff of Carver Elementary School along with the central office personnel, and lay citizens develop a curriculum for Carver Elementary School, Bryan, Texas, taking into considerations the abilities, interests, and needs of the pupils to be served.
2. That a careful study of the results of the California Achievement Tests be made to determine how well the pupils are measuring up to recognized standards.

3. That each teacher observe and study cumulative, health, and all other school records of each of his or her pupil as a means of determining individual needs.
4. That the teacher use some kind of diagnostic instrument in determining the pupils' difficulties, weak spots and strengths.

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Elementary • GRADES 4-5-6 • form BB

# California Achievement Tests Complete Battery

READING — ARITHMETIC — LANGUAGE

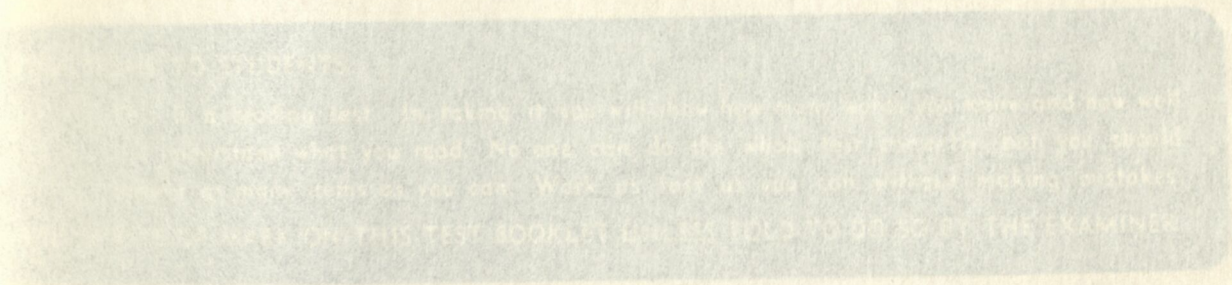
(Formerly Progressive Achievement Tests — Elementary Battery)

REVISED BY ERNEST W. TIEGS AND WILLIS W. CLARK

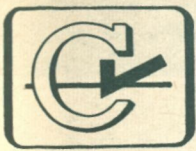


## APPENDIX

### Reading



*W. W. Clark*  
*Ernest W. Tiegs*  
*California Test Bureau*



Elementary • GRADES 4 - 5 - 6 • form BB

# California Achievement Tests Complete Battery

READING — ARITHMETIC — LANGUAGE

(Formerly Progressive Achievement Tests — Elementary Battery)

DEvised BY ERNEST W. TIEGS AND WILLIS W. CLARK

E

## Reading

### INSTRUCTIONS TO STUDENTS:

This is a reading test. In taking it you will show how many words you know and how well you understand what you read. No one can do the whole test correctly, but you should answer as many items as you can. Work as fast as you can without making mistakes.

DO NOT WRITE OR MARK ON THIS TEST BOOKLET UNLESS TOLD TO DO SO BY THE EXAMINER.

**DIRECTIONS:** If two words are the same or mean the same, mark S as you are told. If they are different or mean different things, mark D.

		Correct Test Booklet Mark	Correct Answer Sheet Mark
SAMPLE: A.	dog.....dog	dog.....S.....dog	A   S   D 
SAMPLE: B.	boy.....girl	boy.....girl	B   S   D 

**TEST 1 — SECTION A**

1. run.....have
2. fire.....fire
3. mother.....mother
4. boy.....bay
5. chloride.....chloride
6. engrave.....engrave
7. distrust.....district
8. glossary.....gloomy
9. league.....league
10. shriek.....shrub
11. ponder.....poplar
12. whither.....weather
13. forceps.....forceps
14. manipulation.....manifestation
15. interpellation.....interpolation
16. WARRIOR.....WARRIOR
17. PLAINT.....PLAIT
18. PLEASANT.....PLEASANT
19. HEMORRHAGE.....HEMISPHERE
20. subterranean.....SUBTERRANEAN
21. PINK.....PICK
22. THROUGH.....thorough
23. vaccination.....VOCIFERATION
24. straighten.....straighten
25. miraculous.....miraculous

**STOP** NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. A Score (number right).....

**DIRECTIONS:** Look at the words which are given on the lower part of this page. Each line is numbered and each word has a smaller number, 1, 2, 3, or 4 in front of it. There are four words on each line. The examiner will pronounce one word from each line. You are to mark as you are told the number of the word that is pronounced.

**PRACTICE EXERCISE**

**SAMPLE: C.** 1 cow 2 horse 3 dog 4 goat 3 C  
 In this sample the word is dog,  
 so the 3 is marked.

**SAMPLE: D.** 1 run 2 jump 3 throw 4 swing \_\_\_\_\_ D  
 You are to mark the number of  
 the word that was pronounced.  
 It is number 4.

	Correct Sheet		Answer Mark	
	1	2	3	4
C	⋮	⋮	⋮	⋮
D	⋮	⋮	⋮	⋮

**TEST 1 — SECTION B**

✓ Mark as you have been told the number of the word pronounced.

26. 1 this	2 tree	3 my	4 ball	_____ 26
27. 1 grand	2 growl	3 grunt	4 great	_____ 27
28. 1 wrath	2 wreck	3 wrist	4 write	_____ 28
29. 1 Tuesday	2 Wednesday	3 Thursday	4 Monday	_____ 29
30. 1 singeing	2 moulting	3 chattering	4 singing	_____ 30
31. 1 June	2 January	3 July	4 August	_____ 31
32. 1 thoroughfare	2 throughout	3 through	4 thought	_____ 32
33. 1 practice	2 precious	3 prairie	4 practical	_____ 33
34. 1 warship	2 watch	3 wanness	4 warrant	_____ 34
35. 1 electrocute	2 efficient	3 elimination	4 elasticity	_____ 35
36. 1 premium	2 political	3 public	4 primary	_____ 36
37. 1 blizzard	2 blight	3 bluster	4 blotch	_____ 37
38. 1 associate	2 acquire	3 avenue	4 arrival	_____ 38
39. 1 YIELD	2 YOUNG	3 YACHT	4 YAM	_____ 39
40. 1 WHARF	2 WHISTLE	3 wholesale	4 whirl	_____ 40
41. 1 recipe	2 recital	3 regime	4 receipt	_____ 41
42. 1 carnival	2 contagious	3 cautious	4 cafeteria	_____ 42
43. 1 MASSACRE	2 menagerie	3 material	4 maximum	_____ 43
44. 1 chauffeur	2 chloroform	3 chapeau	4 charlatan	_____ 44
45. 1 rheometer	2 pneumonia	3 rheumatics	4 pneumatics	_____ 45

**STOP**

NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. B Score (number right).....

**DIRECTIONS:** Mark as you are told the number of the word that means the opposite or about the opposite of the first word.

SAMPLE: E.	little	1 blue	2 run	3 big	4 rich	Correct Test	Correct Answer					
						Booklet	Mark	Sheet	Mark	1	2	3
						3	E	E	:	:		:

**TEST 1 — SECTION C**

46. high	1 crooked	2 low	3 lost	4 end	_____46
47. give	1 raw	2 bill	3 stem	4 receive	_____47
48. cry	1 mind	2 laugh	3 family	4 add	_____48
49. strong	1 brook	2 that	3 weak	4 sugar	_____49
50. sweet	1 sour	2 hint	3 feature	4 swell	_____50
51. youth	1 deal	2 cause	3 age	4 arrive	_____51
52. hastily	1 hate	2 aid	3 love	4 leisurely	_____52
53. safety	1 danger	2 alarm	3 refuse	4 hate	_____53
54. attack	1 age	2 defense	3 warn	4 alarm	_____54
55. below	1 love	2 cause	3 above	4 permit	_____55
56. despair	1 grocery	2 demolish	3 orator	4 hope	_____56
57. tame	1 wild	2 repeat	3 treat	4 spot	_____57
58. solid	1 soldier	2 liquid	3 torrid	4 whistle	_____58
59. east	1 under	2 ease	3 west	4 best	_____59
60. aloud	1 bracelet	2 chirp	3 almond	4 silent	_____60
61. dainty	1 assume	2 curtain	3 dairy	4 coarse	_____61
62. inferior	1 conquest	2 invite	3 ideal	4 superior	_____62
63. peril	1 safety	2 mental	3 remote	4 purse	_____63
64. victor	1 statue	2 loser	3 treaty	4 wallet	_____64
65. sad	1 mood	2 vocal	3 glad	4 sap	_____65
66. unseen	1 notice	2 valor	3 unsteady	4 visible	_____66
67. traitor	1 friend	2 weasel	3 young	4 tragic	_____67
68. expensive	1 infect	2 excel	3 cheap	4 experiment	_____68

**DIRECTIONS:** Mark as you are told the number of the word that means the same or about the same as the first word.

SAMPLE:	F.	large					Correct Test Booklet	Correct Answer Sheet					
			1 pretty	2 run	3 big	4 rich	Mark	1	2	3	4		
							3	F	F	⋮	⋮	⋮	⋮

**TEST 1 — SECTION D**

69. enemy	1 thicken	2 weigh	3 foe	4 subdue	_____ 69
70. promise	1 compact	2 pure	3 neutral	4 lovely	_____ 70
71. lie	1 amateur	2 falsehood	3 denial	4 casual	_____ 71
72. trade	1 merchant	2 vein	3 exchange	4 ideal	_____ 72
73. hard	1 deed	2 hint	3 feature	4 solid	_____ 73
74. wit	1 hail	2 fear	3 humor	4 ink	_____ 74
75. calm	1 stucco	2 token	3 vanity	4 quiet	_____ 75
76. industry	1 business	2 infantry	3 repent	4 outbreak	_____ 76
77. consent	1 love	2 permission	3 alarm	4 cause	_____ 77
78. speech	1 defend	2 feast	3 talk	4 cure	_____ 78
79. prophet	1 mangle	2 obstruct	3 pleasant	4 forecaster	_____ 79
80. settlement	1 location	2 innocent	3 silent	4 wise	_____ 80
81. hush	1 keen	2 quiet	3 mood	4 hurl	_____ 81
82. freight	1 allow	2 easy	3 hurl	4 cargo	_____ 82
83. physician	1 doctor	2 enemy	3 leisure	4 ugly	_____ 83
84. magnificent	1 purchase	2 magician	3 impressive	4 stationary	_____ 84
85. abolish	1 ocean	2 cry	3 destroy	4 high	_____ 85
86. plenty	1 wonder	2 stem	3 friend	4 sufficient	_____ 86
87. tray	1 container	2 land	3 brook	4 expect	_____ 87
88. amuse	1 fertile	2 entertain	3 doubt	4 amount	_____ 88
89. hatred	1 haul	2 nurse	3 pedal	4 enmity	_____ 89
90. lecture	1 pulpit	2 rigor	3 sermon	4 ledge	_____ 90

**STOP**

NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. D Score (number right).....

**DIRECTIONS:** Read the following directions. Mark as you are told the number or letter of each correct answer.

**TEST 2 — SECTION E**

91. By crossing out two letters you can make **count** out of the word, **country**. Mark the number of the two letters which would be crossed out.

<sup>1</sup> ry    <sup>2</sup> ct    <sup>3</sup> nu    <sup>4</sup> cy    \_\_\_\_\_91

92. Find the name of the largest animal and mark its number.

<sup>1</sup> dog    <sup>2</sup> rat    <sup>3</sup> cow    <sup>4</sup> sheep    \_\_\_\_\_92

93. Some of the Roman numerals and their values are:

IX=9    XIX=19  
XX=20    XXI=21

Mark the letter of the Roman numeral for 20.

a XIX    b XX    c IX    d XXI    \_\_\_\_\_93

94. Mark the number of the seventh word in this sentence.

<sup>1</sup> third    <sup>2</sup> word    <sup>3</sup> the    <sup>4</sup> in    \_\_\_\_\_94

95. Mark the letter which must be added to **hors** to make **horse**.

i    a    s    e    \_\_\_\_\_95

96. Mark the sixth letter of the last word in this sentence.

e    a    n    r    t    \_\_\_\_\_96

97. Read the following names:

Marie Arthur Richard Mary

Mark the number which shows the first letter of the girls' names.

<sup>1</sup> A    <sup>2</sup> M    <sup>3</sup> R    \_\_\_\_\_97

98. Read these numbers:

6 3 4 8 5 2 1 9 0

Mark the letter of the third number to the right of 8.

a 1    b 9    c 6    d 3    \_\_\_\_\_98

99. When two words are spoken as one, the shortened form is a contraction. The apostrophe denotes the missing letter; such as **can not**, **can't**. Mark the number of the word meaning **do not** in the form of a contraction.

<sup>1</sup> can't    <sup>2</sup> do not  
<sup>3</sup> doesn't    <sup>4</sup> don't    \_\_\_\_\_99

100. The suffix *ness* is used to form nouns meaning state or quality of being; such as sick, sickness. Mark the number of the word which has the suffix *ness* added to the word, white.

<sup>1</sup> sickness    <sup>2</sup> ness  
<sup>3</sup> whiteness    <sup>4</sup> white    \_\_\_\_\_100

**STOP**

NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. E Score  
(number right).....

**DIRECTIONS:** Read the following directions. Mark as you are told the number or letter of each correct answer.

**TEST 2—SECTION F**

101. The preface is found in what part of a book?  
 1 beginning 2 middle 3 end \_\_\_\_\_101

102. The index is found in what part of a book?  
 1 beginning 2 middle 3 end \_\_\_\_\_102

✓ Read this list of words:

yard	pail
jar	bird
help	king
quiet	ripe

If the above words were arranged alphabetically,

103. help would come next after  
 1 bird 2 king 3 yard \_\_\_\_\_103

104. pail would come next after  
 1 quiet 2 jar 3 king \_\_\_\_\_104

✓ Look at the following and find the answers to items 105, 106, and 107.

**Table of Contents**

Chapter	Page
1. How Man Conquered the Wilderness	1
2. Poultry and Eggs.....	19
3. Transportation .....	43
4. Why We Need Food.....	50
5. The Nations of the Earth.....	71
6. Communication .....	88
7. Why the World Works.....	100

105. Mark the letter of the page which shows where "Transportation" begins.  
 a 1 b 19 c 43 d 50 \_\_\_\_\_105

106. Mark the number which shows what story begins on page 88.  
 1 Poultry and Eggs  
 2 Communication  
 3 Transportation \_\_\_\_\_106

107. Mark the number which shows to which chapter the material on page 38 belongs.  
 1 2 3 4 5 \_\_\_\_\_107

✓ Look at this partial index and find the answers to items 108, 109, and 110.

**INDEX**

Ohio River, 134.  
 Oil: In Iraq, 383; in Manchuria, 400; in Persia, 382; in plains, 56; in Rumania, 329; in Trans-Caucasian Regions, 377; in Yugoslavia, 331.  
 Oil cakes, what they are, 27.  
 Oil seeds, in British East Africa, 355.  
 Oklahoma: cattle in, 141; chief city of, 147; climate of, 132; cotton in, 137; oil in, 141; physical features of, 135; rank of, in agriculture, 140; wheat in, 157.  
 Olive pressing, in Albania, 333.  
 Olives: in Africa, 349; in Anatolia, 376; in California, 190; in Greece, 332; in Italy, 337.

108. Mark the letter which shows on what page information about the Ohio River will be found.  
 a 8 b 134 c 7 d 337 \_\_\_\_\_108

109. Mark the letter which shows on what page information concerning oil in Rumania will be found.  
 a 383 b 400 c 329 d 331 \_\_\_\_\_109

110. Mark the letter which shows on what page information concerning the physical features of Oklahoma will be found.  
 a 141 b 147 c 157 d 135 \_\_\_\_\_110

**STOP** NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. F Score (number right).....



## TEST 2—SECTION G

✓ Read this story:

Camels live most of the time on the desert. They have padded feet, nostrils that can be closed in a storm, and thick bushy eyebrows and lashes which protect their eyes. Their stomachs and humps are made up of cells which store their water and food for future use on their long journeys through the desert wastes. They are the principal means of transportation on the Sahara Desert.

✓ Mark as you have been told the number of each correct answer. You may look back to find the answers.

111. The best title for the above story is  
<sup>1</sup> Domestic Animals  
<sup>2</sup> The Camel <sup>3</sup> The Desert \_\_\_\_\_111
112. Camels are useful  
<sup>1</sup> in large cities <sup>2</sup> as food  
<sup>3</sup> in transportation \_\_\_\_\_112
113. The stomach and hump are made up of  
<sup>1</sup> fur <sup>2</sup> cells <sup>3</sup> pads \_\_\_\_\_113
114. The camel eats  
<sup>1</sup> irregularly <sup>2</sup> regularly  
<sup>3</sup> rarely \_\_\_\_\_114
115. The camel is  
<sup>1</sup> wild <sup>2</sup> useless <sup>3</sup> useful \_\_\_\_\_115
116. His home is in the  
<sup>1</sup> desert <sup>2</sup> jungles <sup>3</sup> mountains \_\_\_\_\_116

✓ Read this story:

One of the large countries in North America is Canada.

Canada has an irregular coast line with many fine harbors. It is lacking in large ports because of the ice-bound harbors in the winter, and this is a serious handicap to the development of trade. During the warm summer season, important agricultural products are grown.

Canada is rich in natural resources, but the population is still small. There are vast areas of valuable forests; the many fur-bearing animals are a source of great revenue, and the streams have unlimited possibilities for the development of power.

✓ Mark the number of each correct answer. You may look back to find the answers.

117. The above story is about  
<sup>1</sup> North America <sup>2</sup> Canada  
<sup>3</sup> large countries \_\_\_\_\_117
118. They have  
<sup>1</sup> few natural resources  
<sup>2</sup> many large ports  
<sup>3</sup> fine harbors \_\_\_\_\_118
119. A serious handicap is  
<sup>1</sup> over-production  
<sup>2</sup> ice-bound harbors  
<sup>3</sup> a lack of streams \_\_\_\_\_119
120. The climate of Canada is  
<sup>1</sup> changeable <sup>2</sup> very dry  
<sup>3</sup> equatorial \_\_\_\_\_120
121. Choose the best statement:  
<sup>1</sup> Canada has few natural resources  
<sup>2</sup> The cotton is profitable in Canada  
<sup>3</sup> Canada has many unsettled areas \_\_\_\_\_121

✓ Read this story:

### The Telephone

The telephone is a device for transmitting speech by means of electricity. The first patent for this instrument was granted to Alexander Graham Bell on March 7, 1876.

Since the original invention there have been many improvements in the mechanical features of telephones. Submarine cables have been laid across the ocean to permit communication between countries, and many overhead wires have been removed by running the wires through conduits under ground. As a result of a large amount of experimentation, we can now communicate by wireless telephone.

The principal achievement of the telephone is that of abridging space. By this means of communication, business transactions and conversations are more quickly completed and trade and commerce have been greatly stimulated. Thus we see that telephones have been a definite aid in the progress of our nation.

✓ Mark the number of each correct answer. You may look back to find the answers.

122. Alexander Graham Bell was  
 1 an artist      2 an inventor  
 3 a navigator    4 a naturalist \_\_\_\_\_ 122
123. Conduits have been used to remove  
 1 submarine cables    2 commerce  
 3 overhead wires  
 4 business transactions \_\_\_\_\_ 123

✓ Read the six titles below. You are to select one that would make the best title for each of the three paragraphs of the story.

#### Titles

1. March 7, 1876
2. Invention of the Telephone
3. Improvements and Developments
4. Mechanical Features
5. Effects of the Invention
6. Trade and Commerce

124. The best title for the first paragraph is number  
 1    2    3    4    5    \_\_\_\_\_ 124
125. The best title for the second paragraph is number  
 2    3    4    5    6    \_\_\_\_\_ 125
126. The best title for the third paragraph is number  
 2    3    4    5    6    \_\_\_\_\_ 126

The following things are mentioned in the story:

- Removing overhead wires
- Granting the patent
- Wireless telephone
- Improving the telephone

The order in which the above things were mentioned in the story is as follows:

127. Improving the telephone was  
 1st    2nd    3rd    4th    \_\_\_\_\_ 127
128. Removing overhead wires was  
 1st    2nd    3rd    4th    \_\_\_\_\_ 128
129. Wireless telephone was  
 1st    2nd    3rd    4th    \_\_\_\_\_ 129
130. Granting the patent was  
 1st    2nd    3rd    4th    \_\_\_\_\_ 130

**STOP**

NOW WAIT FOR FURTHER INSTRUCTIONS

## Arithmetic

### INSTRUCTIONS TO STUDENTS:

This is an arithmetic test. In taking it you will show how well you can think and work problems. No one is expected to do the whole test correctly, but you should answer as many items as you can. Work as fast as you can without making mistakes.

DO NOT WRITE OR MARK ON THIS TEST BOOKLET UNLESS TOLD TO DO SO BY THE EXAMINER.

**DIRECTIONS:** Decide how each of the amounts below should be written as a number. Then mark as you are told the letter of each correct answer. For some of the problems none of the answers given may be correct. If you cannot work a problem, or if you think that none of the answers given is correct, mark the letter, e. In doing this test you should finish the first column before doing the second. Look at the samples to the right and see how they are marked.

Sample A: Twelve		Correct Answer Sheet Mark					
a 10	b 12	A	a	b	c	d	e
c 11	d 2						
e None							
		Correct Test Booklet Mark					
		b A					
Sample B: Twenty		Correct Answer Sheet Mark					
a 22	b 200	B	a	b	c	d	e
c 2	d 21						
e None							
		Correct Test Booklet Mark					
		e B					

**TEST 3 — SECTION A**

1. Thirty-four
  - a 43
  - b .034
  - c 34
  - d 340
  - e None

\_\_\_\_\_ (1)

---

2. One hundred eleven
  - a 100,11
  - b 1101
  - c 1011
  - d 111,00
  - e None

\_\_\_\_\_ (2)

---

3. Nine hundred fifty-two
  - a 952
  - b 900,52
  - c 9052
  - d 952,00
  - e None

\_\_\_\_\_ (3)

---

4. Three hundred four
  - a 300,4
  - b 3400
  - c 304
  - d 304,0
  - e None

\_\_\_\_\_ (4)

---

5. Two thousand six
  - a 2000,6
  - b 2,6000
  - c 206
  - d 2006
  - e None

\_\_\_\_\_ (5)

---

6. Two dollars and two cents
  - a \$2.2¢
  - b \$2.02
  - c \$2.2
  - d 2.02
  - e None

\_\_\_\_\_ (6)

---

7. Sixty dollars and nine cents
  - a \$60.9
  - b \$60.9¢
  - c 60.09
  - d \$60.09
  - e None

\_\_\_\_\_ (7)

✓ Read these Roman numerals. Then mark as you have been told the letter of each correct answer.

8. IV means
  - a 2
  - b 4
  - c 6
  - d 8
  - e None

\_\_\_\_\_ (8)

9. XXX means
  - a 25
  - b 29
  - c 30
  - d 31
  - e None

\_\_\_\_\_ (9)

10. M means
  - a 1000
  - b 4000
  - c 5000
  - d 7000
  - e None

\_\_\_\_\_ (10)

✓ Find the smallest number, marked a, b, c, or d, in each of the following rows. Then mark its letter.

11. a 321    b 226    c 128    d 190    \_\_\_\_\_ 11

---

12. a  $\frac{1}{5}$     b  $\frac{1}{4}$     c  $\frac{2}{3}$     d  $\frac{3}{5}$     \_\_\_\_\_ 12

---

13. a 20.01    b 21.3    c 2.0671    d 5.361    \_\_\_\_\_ 13

---

14. a  $\frac{4}{5}$     b .25    c .62 $\frac{1}{2}$     d  $\frac{5}{8}$     \_\_\_\_\_ 14

---

15. a  $\frac{1}{3}$     b 75%    c  $\frac{2}{7}$     d  $\frac{3}{5}$     \_\_\_\_\_ 15

**STOP**

NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. A Score (number right).....

**DIRECTIONS:** Mark the letter or number of each correct answer. If you do not know an answer, or you think that none of the answers given is correct, you should mark the letter, e (items 16-19), or the number, 5 (items 20-30). Finish the first column before doing the second. Remember to do your figuring on scratch paper if you are marking your answers on an answer sheet.

**TEST 3 — SECTION B**

16. $5 \times 8 =$	a 13 b 40 c $\frac{5}{8}$ d $\frac{8}{5}$ e None	24. $\phi$ means	<sup>1</sup> nickel <sup>2</sup> quarter <sup>3</sup> dime <sup>4</sup> dollar <sup>5</sup> None
17. $9 \div 3 =$	a 3 b 27 c $\frac{1}{3}$ d 6 e None	25. oz. means	<sup>1</sup> hour <sup>2</sup> inch <sup>3</sup> ounce <sup>4</sup> root <sup>5</sup> None
18. $18 + 2 =$	a 0 b 1 c 10 d 25 e None	26. sec. means	<sup>1</sup> foot <sup>2</sup> second <sup>3</sup> part <sup>4</sup> ratio <sup>5</sup> None
19. $20 - 4 =$	a 5 b $\frac{1}{5}$ c 80 d 16 e None	27. $\pi$ means	<sup>1</sup> pi <sup>2</sup> degree <sup>3</sup> root <sup>4</sup> part <sup>5</sup> None
20. $\div$ means	<sup>1</sup> add <sup>2</sup> subtract <sup>3</sup> multiply <sup>4</sup> divide <sup>5</sup> None	28. % means	<sup>1</sup> degree <sup>2</sup> inch <sup>3</sup> per cent <sup>4</sup> ratio <sup>5</sup> None
21. $+$ means	<sup>1</sup> add <sup>2</sup> subtract <sup>3</sup> multiply <sup>4</sup> divide <sup>5</sup> None	29. " means	<sup>1</sup> angle <sup>2</sup> part <sup>3</sup> at <sup>4</sup> inch <sup>5</sup> None
22. $-$ means	<sup>1</sup> add <sup>2</sup> subtract <sup>3</sup> multiply <sup>4</sup> divide <sup>5</sup> None	30. $\sqrt{\quad}$ means	<sup>1</sup> care of <sup>2</sup> less than <sup>3</sup> square root <sup>4</sup> right angle <sup>5</sup> None
23. $\times$ means	<sup>1</sup> add <sup>2</sup> subtract <sup>3</sup> multiply <sup>4</sup> divide <sup>5</sup> None		

**STOP** NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. B Score  
(number right).....

**DIRECTIONS:** Work these problems. Then mark as you have been told the letter of each correct answer. For some of the problems none of the answers given may be correct. If you cannot work a problem, or if you think none of the answers given is correct, you should mark the letter, e. Remember to do your figuring on scratch paper if you are marking your answers on an answer sheet.

**TEST 3 — SECTION C**

31. Nan has 5 pieces of candy. Fred has 10 pieces of candy. How many pieces have they together?
- a 5  
b 15  
c 50  
d  $7\frac{1}{2}$   
e None
- (31)
- 
32. A farmer had 14 cows. He sold four of them. How many cows did he have left?
- a 18  
b 4  
c 9  
d 56  
e None
- (32)
- 
33. Ann has 2 dolls. Sally has three times as many. How many dolls does Sally have?
- a 6  
b 8  
c 3  
d 4  
e None
- (33)
- 
34. Jane had 9 apples and she divided them equally among two other girls and herself. How many apples did each receive?
- a 9  
b 6  
c 27  
d 3  
e None
- (34)
- 
35. One dish contained 12 cookies and another contained eighteen. The children ate six of the cookies. How many were left?
- a 0  
b 24  
c 30  
d 12  
e None
- (35)
- 
36. A classroom had 6 rows of desks with 7 desks in each row. Five desks were moved from the room. How many desks were left?
- a 37  
b 13  
c 42  
d 8  
e None
- (36)
- 
37. Mr. Smith had 100 chickens and sold 40. He gave all the others to his four children, giving the same number to each. How many chickens did each child receive?
- a 60  
b 15  
c 35  
d 10  
e None
- (37)

TEST 3 — SECTION C (Continued)

38. Mary weighs 85 pounds, Ruth weighs 65 pounds, and Ethel weighs 90 pounds. What is their average weight in pounds?  
 a 85  
 b  $82\frac{1}{2}$   
 c  $83\frac{1}{3}$   
 d 80  
 e None (38)
- 
39. How many square inches in a piece of glass 15 inches wide and 20 inches long?  
 a 35  
 b 200  
 c 300  
 d 150  
 e None (39)
- 
40. How many one-inch squares can be placed in the bottom of a box 3 inches wide, 6 inches deep, and 10 inches long?  
 a 19  
 b 90  
 c 60  
 d 30  
 e None (40)
- 
41. In a candy sale, four-fifths of a class brought bags of taffy to school. There were 45 pupils in the class. How many pupils brought taffy?  
 a 36  
 b 9  
 c  $\frac{4}{5}$   
 d 40  
 e None (41)
- 
42. Mary paid \$1.75 for a new book, 30 cents for lunch, and 20 cents for carfare. She spent the amount left out of \$5.00 for a new dress. How much did the dress cost?  
 a \$2.25  
 b \$5.00  
 c \$2.75  
 d \$3.25  
 e None (42)
- 
43. Our team has played 12 games and lost three of them. What per cent of the games did we lose?  
 a 25  
 b  $33\frac{1}{3}$   
 c 50  
 d  $\frac{1}{4}$   
 e None (43)
- 
44. The bank received seven per cent interest on a loan of \$300.00 for one year. How much interest was received?  
 a \$7  
 b \$10  
 c \$21  
 d 30  
 e None (44)
- 
45. On a map  $\frac{1}{4}$  inch is used to represent 10 miles. The distance between two cities on the map is 2 inches. How many miles are they apart?  
 a 20  
 b 40  
 c 60  
 d 80  
 e None (45)

**DIRECTIONS:** Do these problems in addition. Then mark as you have been told the letter of each correct answer. For some of the problems none of the answers given may be correct. If you cannot work a problem, or if you think none of the answers given is correct, you should mark the letter, e. Finish each column before going on to the next. Be sure to reduce fractions to lowest terms. Remember to do your figuring on scratch paper if you are marking your answers on an answer sheet.

**TEST 4 — SECTION D**

<p>(46)</p> $\begin{array}{r} 41 \\ +32 \\ \hline \end{array}$ <p>a 10 b 73 c 55 d 9 e None _____ (46)</p>	<p>(53)</p> $\begin{array}{r} \$34.24 \\ 8.65 \\ .55 \\ +4.26 \\ \hline \end{array}$ <p>a \$47.60 b \$48.70 c \$47.70 d \$37.70 e None _____ (53)</p>	<p>(60)</p> $\begin{array}{r} 5\frac{3}{4} \\ +3\frac{2}{3} \\ \hline \end{array}$ <p>a <math>9\frac{1}{2}</math> b <math>8\frac{5}{12}</math> c <math>8\frac{5}{7}</math> d <math>9\frac{5}{12}</math> e None _____ (60)</p>
<p>(47)</p> $\begin{array}{r} 40 \\ +26 \\ \hline \end{array}$ <p>a 120 b 12 c 66 d 660 e None _____ (47)</p>	<p>(54)</p> $\$5.00 + \$0.60 + \$12 + \$2.40 =$ <p>a \$8.12 b \$20.00 c \$31.70 d \$19.00 e None _____ (54)</p>	<p>(61)</p> $\begin{array}{r} 33\frac{1}{4} \\ 12\frac{1}{2} \\ +21\frac{2}{3} \\ \hline \end{array}$ <p>a <math>67\frac{4}{9}</math> b <math>67\frac{7}{8}</math> c <math>67\frac{5}{12}</math> d <math>66\frac{5}{12}</math> e None _____ (61)</p>
<p>(48)</p> $\begin{array}{r} 409 \\ +520 \\ \hline \end{array}$ <p>a 929 b 20 c 90290 d 713 e None _____ (48)</p>	<p>(55)</p> $\frac{1}{2} + \frac{1}{2}$ <p>a 24 b <math>\frac{1}{4}</math> c 0 d 1 e None _____ (55)</p>	<p>(62)</p> $3\frac{1}{2} + 6.25 =$ <p>a <math>9\frac{1}{2}.25</math> b 10 c <math>6.28\frac{1}{2}</math> d 9.75 e None _____ (62)</p>
<p>(49)</p> $\begin{array}{r} 57 \\ +6 \\ \hline \end{array}$ <p>a 51 b 342 c 513 d 63 e None _____ (49)</p>	<p>(56)</p> $\frac{1}{3} + \frac{1}{6}$ <p>a <math>\frac{1}{6}</math> b <math>\frac{1}{18}</math> c <math>\frac{1}{2}</math> d <math>\frac{2}{9}</math> e None _____ (56)</p>	<p>(63)</p> $.04 + .261 + .3108 =$ <p>a .3373 b .6118 c .9718 d .5118 e None _____ (63)</p>
<p>(50)</p> $\begin{array}{r} 34 \\ +18 \\ \hline \end{array}$ <p>a 412 b 52 c 17 d 42 e None _____ (50)</p>	<p>(57)</p> $\begin{array}{r} 24 \\ +3\frac{2}{3} \\ \hline \end{array}$ <p>a <math>27\frac{2}{3}</math> b <math>27\frac{1}{3}</math> c <math>26\frac{1}{3}</math> d <math>20\frac{1}{3}</math> e None _____ (57)</p>	<p>(64)</p> $32.4 + 2.53 + .0627 + 4 =$ <p>a 1207 b 39.0927 c 38.9927 d 1604 e None _____ (64)</p>
<p>(51)</p> $\begin{array}{r} 266 \\ +158 \\ \hline \end{array}$ <p>a 51313 b 653 c 633 d 543 e None _____ (51)</p>	<p>(58)</p> $\begin{array}{r} 3\frac{3}{4} \\ +3\frac{1}{8} \\ \hline \end{array}$ <p>a <math>3\frac{1}{3}</math> b <math>3\frac{7}{8}</math> c <math>3\frac{4}{12}</math> d <math>3\frac{1}{8}</math> e None _____ (58)</p>	<p>(65)</p> $\begin{array}{r} 1\text{ ft. }10\text{ in.} \\ +1\text{ ft. }6\text{ in.} \\ \hline \end{array}$ <p>a 3 ft. 4 in. b 2 ft. 4 in. c 2 ft. 16 in. d 3 ft. 6 in. e None _____ (65)</p>
<p>(52)</p> $\begin{array}{r} 2317 \\ 6894 \\ 5134 \\ +6020 \\ \hline \end{array}$ <p>a 19255 b 20355 c 19365 d 20365 e None _____ (52)</p>	<p>(59)</p> $\begin{array}{r} 21\frac{1}{3} \\ +4\frac{1}{4} \\ \hline \end{array}$ <p>a <math>25\frac{7}{12}</math> b <math>25\frac{1}{12}</math> c <math>25\frac{1}{7}</math> d <math>25\frac{2}{7}</math> e None _____ (59)</p>	

**STOP** NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. D Score (number right).....



**DIRECTIONS:** Do these problems in subtraction. Then mark as you have been told the letter of each correct answer. For some of the problems none of the answers given may be correct. If you cannot work a problem, or if you think none of the answers given is correct, you should mark the letter, e. Finish each column before going on to the next. Be sure to reduce fractions to lowest terms.

**TEST 4 — SECTION E**

<p>(66)</p> $\begin{array}{r} 46 \\ -32 \\ \hline \end{array}$ <p>a 78 b 4 c 14 d 18 e None _____ (66)</p>	<p>(73)</p> $\begin{array}{r} \$24.00 \\ -2.75 \\ \hline \end{array}$ <p>a \$26.75 b \$22.35 c \$22.25 d \$21.25 e None _____ (73)</p>	<p>(80)</p> $\begin{array}{r} 9 \\ -5\frac{1}{2} \\ \hline \end{array}$ <p>a <math>3\frac{1}{2}</math> b <math>13\frac{1}{2}</math> c <math>4\frac{1}{2}</math> d <math>5\frac{1}{2}</math> e None _____ (80)</p>
<p>(67)</p> $\begin{array}{r} 45 \\ -3 \\ \hline \end{array}$ <p>a 32 b 2 c 48 d 42 e None _____ (67)</p>	<p>(74)</p> $\$56 - \$12.75 =$ <p>a \$68.75 b \$43.25 c \$33.25 d \$56.75 e None _____ (74)</p>	<p>(81)</p> $\begin{array}{r} 35\frac{1}{3} \\ -12\frac{2}{3} \\ \hline \end{array}$ <p>a <math>23\frac{2}{3}</math> b <math>22\frac{2}{3}</math> c <math>22\frac{1}{3}</math> d <math>22\frac{1}{2}</math> e None _____ (81)</p>
<p>(68)</p> $\begin{array}{r} 398 \\ -203 \\ \hline \end{array}$ <p>a 195 b 601 c 95 d 185 e None _____ (68)</p>	<p>(75)</p> $\begin{array}{r} \frac{1}{4} \\ -\frac{1}{4} \\ \hline \end{array}$ <p>a 0 b <math>\frac{1}{8}</math> c <math>\frac{1}{2}</math> d <math>\frac{1}{4}</math> e None _____ (75)</p>	<p>(82)</p> $50.8 - 6\frac{1}{2} =$ <p>a 44.3 b <math>44.8\frac{1}{2}</math> c 43.3 d <math>56.8\frac{1}{2}</math> e None _____ (82)</p>
<p>(69)</p> $\begin{array}{r} 470 \\ -230 \\ \hline \end{array}$ <p>a 2400 b 240 c 140 d 230 e None _____ (69)</p>	<p>(76)</p> $\begin{array}{r} \frac{3}{5} \\ -\frac{1}{5} \\ \hline \end{array}$ <p>a <math>\frac{4}{5}</math> b <math>\frac{1}{5}</math> c <math>\frac{2}{5}</math> d 2 e None _____ (76)</p>	<p>(83)</p> $75.460 - 33.16 =$ <p>a 72.144 b 43.2 c 42.3 d 41.30 e None _____ (83)</p>
<p>(70)</p> $\begin{array}{r} 45 \\ -18 \\ \hline \end{array}$ <p>a 37 b 27 c 63 d 33 e None _____ (70)</p>	<p>(77)</p> $\begin{array}{r} \frac{5}{6} \\ -\frac{1}{3} \\ \hline \end{array}$ <p>a <math>\frac{4}{3}</math> b <math>\frac{2}{9}</math> c <math>1\frac{1}{3}</math> d <math>\frac{1}{2}</math> e None _____ (77)</p>	<p>(84)</p> $45.05 - 5.0379 =$ <p>a 45.874 b 54.126 c 40.0121 d 40.0231 e None _____ (84)</p>
<p>(71)</p> $\begin{array}{r} 357 \\ -298 \\ \hline \end{array}$ <p>a 189 b 99 c 179 d 69 e None _____ (71)</p>	<p>(78)</p> $\begin{array}{r} \frac{3}{4} \\ -\frac{1}{3} \\ \hline \end{array}$ <p>a 2 b <math>\frac{1}{3}</math> c <math>\frac{5}{12}</math> d <math>\frac{1}{6}</math> e None _____ (78)</p>	<p>(85)</p> $\begin{array}{r} 8\text{ ft. } 5\text{ in.} \\ -5\text{ ft. } 10\text{ in.} \\ \hline \end{array}$ <p>a 14 ft. 3 in. b 2 ft. 7 in. c 3 ft. 7 in. d 2 ft. 5 in. e None _____ (85)</p>
<p>(72)</p> $\begin{array}{r} 3703 \\ -1567 \\ \hline \end{array}$ <p>a 2246 b 2236 c 2136 d 2146 e None _____ (72)</p>	<p>(79)</p> $\begin{array}{r} 5\frac{1}{4} \\ -4 \\ \hline \end{array}$ <p>a <math>2\frac{1}{4}</math> b <math>9\frac{1}{4}</math> c <math>\frac{1}{4}</math> d <math>1\frac{1}{4}</math> e None _____ (79)</p>	

**STOP** NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. E Score (number right).....

**DIRECTIONS:** Do these problems in multiplication. Then mark as you have been told the letter of each correct answer. Finish each column before going on to the next. Be sure to reduce fractions to lowest terms.

**TEST 4 — SECTION F**

<p>(86)</p> $\begin{array}{r} 432 \\ \times 2 \\ \hline \end{array}$ <p>a 434 b 430 c 864 d 664 e None _____</p> <p>(86)</p>	<p>(93)</p> $\begin{array}{r} 500 \\ \times 300 \\ \hline \end{array}$ <p>a 1500 b 15000 c 150000 d 80000 e None _____</p> <p>(93)</p>	<p>(100)</p> $7\frac{3}{4} \times \frac{3}{5} =$ <p>a <math>\frac{12}{155}</math>      d <math>4\frac{13}{20}</math> b <math>4\frac{11}{20}</math>      e None c <math>7\frac{9}{20}</math></p> <p>_____</p> <p>(100)</p>
<p>(87)</p> $\begin{array}{r} 500 \\ \times 3 \\ \hline \end{array}$ <p>a 503 b 150 c 497 d 1500 e None _____</p> <p>(87)</p>	<p>(94)</p> $\begin{array}{r} 3045 \\ \times 504 \\ \hline \end{array}$ <p>a 1534680 b 164430 c 15237180 d 3549 e None _____</p> <p>(94)</p>	<p>(101)</p> $5\frac{1}{2} \times 7\frac{3}{5} =$ <p>a <math>5\frac{5}{76}</math>      d <math>1\frac{21}{55}</math> b <math>4\frac{1}{5}</math>      e None c <math>35\frac{3}{10}</math></p> <p>_____</p> <p>(101)</p>
<p>(88)</p> $\begin{array}{r} 42 \\ \times 4 \\ \hline \end{array}$ <p>a 168 b 46 c 166 d 38 e None _____</p> <p>(88)</p>	<p>(95)</p> $4 \times \frac{1}{2} =$ <p>a <math>2\frac{1}{2}</math>      d 2 b 8      e None c <math>\frac{1}{8}</math></p> <p>_____</p> <p>(95)</p>	<p>(102)</p> $\begin{array}{r} 45\frac{4}{5} \\ \times 25 \\ \hline \end{array}$ <p>a 1145 b <math>70\frac{4}{5}</math> c <math>1125\frac{4}{5}</math> d <math>1156\frac{1}{4}</math> e None _____</p> <p>(102)</p>
<p>(89)</p> $\begin{array}{r} 45 \\ \times 5 \\ \hline \end{array}$ <p>a 2025 b 50 c 225 d 40 e None _____</p> <p>(89)</p>	<p>(96)</p> $\frac{1}{4} \times \frac{1}{4} =$ <p>a <math>\frac{1}{2}</math>      d 1 b <math>\frac{1}{16}</math>      e None c <math>\frac{1}{8}</math></p> <p>_____</p> <p>(96)</p>	<p>(103)</p> $\begin{array}{r} 384.6 \\ \times 5 \\ \hline \end{array}$ <p>a 19320 b 385.1 c 384.65 d 1923.0 e None _____</p> <p>(103)</p>
<p>(90)</p> $\begin{array}{r} 805 \\ \times 9 \\ \hline \end{array}$ <p>a 72045 b 7245 c 814 d 796 e None _____</p> <p>(90)</p>	<p>(97)</p> $\frac{1}{3} \times \frac{3}{4} =$ <p>a <math>\frac{1}{3}</math>      d 4 b <math>\frac{4}{7}</math>      e None c <math>\frac{1}{4}</math></p> <p>_____</p> <p>(97)</p>	<p>(104)</p> $\begin{array}{r} 54.38 \\ \times .0025 \\ \hline \end{array}$ <p>a .038066 b .13595 c 135.95 d 13595 e None _____</p> <p>(104)</p>
<p>(91)</p> $\begin{array}{r} 687 \\ \times 45 \\ \hline \end{array}$ <p>a 30915 b 6183 c 732 d 30815 e None _____</p> <p>(91)</p>	<p>(98)</p> $\frac{3}{5} \times \frac{5}{6} =$ <p>a <math>\frac{4}{15}</math>      d <math>\frac{1}{2}</math> b <math>1\frac{4}{5}</math>      e None c <math>18\frac{1}{25}</math></p> <p>_____</p> <p>(98)</p>	<p>(105)</p> $\begin{array}{r} 5 \text{ ft. } 6 \text{ in.} \\ \times 3 \\ \hline \end{array}$ <p>a 16 ft. 6 in. b 5 ft. 9 in. c 15 ft. 18 in. d 6 ft. 6 in. e None _____</p> <p>(105)</p>
<p>(92)</p> $\begin{array}{r} 489 \\ \times 40 \\ \hline \end{array}$ <p>a 529 b 19560 c 1956 d 18460 e None _____</p> <p>(92)</p>	<p>(99)</p> $6 \times 2\frac{1}{4} =$ <p>a <math>12\frac{1}{4}</math>      d 54 b <math>\frac{3}{8}</math>      e None c <math>13\frac{1}{2}</math></p> <p>_____</p> <p>(99)</p>	

**STOP** NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. F Score (number right).....

**DIRECTIONS:** Do these problems in division. Then mark as you have been told the letter of each correct answer. Finish each column before going on to the next. Be sure to express remainders as fractions and reduce fractions to lowest terms.

**TEST 4 — SECTION G**

<p>(106) <math>8 \overline{)16}</math></p> <p>a 15 b 2 c 3 d 20 e None</p> <p>_____ (106)</p>	<p>(113) <math>36 \overline{)7344}</math></p> <p>a 24 b 204 c 240 d 199 e None</p> <p>_____ (113)</p>	<p>(120) <math>\frac{5}{6} \div \frac{1}{3} =</math></p> <p>a <math>2\frac{1}{2}</math>      d <math>\frac{2}{5}</math> b <math>\frac{5}{18}</math>      e None c <math>\frac{1}{18}</math></p> <p>_____ (120)</p>
<p>(107) <math>9 \overline{)45}</math></p> <p>a 5 b 4 c 6 d 9 e None</p> <p>_____ (107)</p>	<p>(114) <math>200 \overline{)8000}</math></p> <p>a 4 b 400 c 40 d 4000 e None</p> <p>_____ (114)</p>	<p>(121) <math>4\frac{1}{8} \div \frac{3}{4} =</math></p> <p>a <math>3\frac{3}{32}</math>      d <math>5\frac{1}{2}</math> b <math>4\frac{1}{6}</math>      e None c <math>4\frac{3}{32}</math></p> <p>_____ (121)</p>
<p>(108) <math>5 \overline{)30}</math></p> <p>a 8 b 60 c 80 d 6 e None</p> <p>_____ (108)</p>	<p>(115) <math>54 \overline{)4892}</math></p> <p>a <math>9050\frac{25}{27}</math> b 1005 c <math>899\frac{25}{54}</math> d <math>901\frac{6}{27}</math> e None</p> <p>_____ (115)</p>	<p>(122) <math>7\frac{3}{5} \div 3\frac{1}{3} =</math></p> <p>a <math>2\frac{7}{25}</math>      d <math>21\frac{1}{5}</math> b 24      e None c <math>22\frac{4}{5}</math></p> <p>_____ (122)</p>
<p>(109) <math>7 \overline{)357}</math></p> <p>a 501 b 105 c 51 d <math>50\frac{5}{7}</math> e None</p> <p>_____ (109)</p>	<p>(116) <math>2 \div \frac{1}{2} =</math></p> <p>a 4      d 1 b <math>\frac{1}{4}</math>      e None c 2</p> <p>_____ (116)</p>	<p>(123) <math>3 \overline{)92\frac{3}{4}}</math></p> <p>a <math>31\frac{1}{12}</math> b 309 c <math>301\frac{1}{12}</math> d <math>30 + 2\frac{3}{4}</math> e None</p> <p>_____ (123)</p>
<p>(110) <math>8 \overline{)176}</math></p> <p>a .012 b 202 c 21 d 22 e None</p> <p>_____ (110)</p>	<p>(117) <math>\frac{1}{3} \div 4 =</math></p> <p>a 12      d <math>1\frac{1}{3}</math> b <math>\frac{3}{4}</math>      e None c <math>\frac{1}{12}</math></p> <p>_____ (117)</p>	<p>(124) <math>4 \overline{)5.04}</math></p> <p>a 1260 b 1.26 c 12.6 d .126 e None</p> <p>_____ (124)</p>
<p>(111) <math>5 \overline{)525}</math></p> <p>a 15 b 1005 c 105 d 101 e None</p> <p>_____ (111)</p>	<p>(118) <math>7 \div \frac{3}{4} =</math></p> <p>a <math>5\frac{1}{4}</math>      d <math>7\frac{3}{4}</math> b <math>9\frac{1}{3}</math>      e None c <math>\frac{3}{28}</math></p> <p>_____ (118)</p>	<p>(125) <math>.04 \overline{)504}</math></p> <p>a 1260 b 12.6 c 1.26 d .126 e None</p> <p>_____ (125)</p>
<p>(112) <math>30 \overline{)360}</math></p> <p>a 12 b 120 c <math>1\frac{1}{15}</math> d 102 e None</p> <p>_____ (112)</p>	<p>(119) <math>\frac{4}{5} \div \frac{4}{5} =</math></p> <p>a <math>\frac{16}{25}</math>      d 1 b <math>\frac{4}{5}</math>      e None c <math>1\frac{3}{5}</math></p> <p>_____ (119)</p>	

**STOP** NOW WAIT FOR FURTHER INSTRUCTIONS

Sec. G Score  
(number right).....

## Language

### INSTRUCTIONS TO STUDENTS:

This is a language test. In taking it you will show what you know about capitalization, punctuation, and words and sentences, and how well you can spell and write. No one can do the whole test correctly, but you should answer as many items as you can. Work as fast as you can without making mistakes.

**DO NOT WRITE OR MARK ON THIS TEST BOOKLET UNLESS TOLD TO DO SO BY THE EXAMINER.**

**DIRECTIONS:** In the sentences below the line, some of the letters with numbers above them should be capitals. Mark the number of each letter that should be a capital. Some lines may have more than one letter that should be a capital; others may have no such letter.

Correct Test  
Booklet Mark

Correct Answer  
Sheet Mark

SAMPLE : A. His name is sam and he is my friend.

3 A

A 1 2 3 4 5  
||| ||| | ||| |||

In Sample A the number 3 letter, s, in sam, should be a capital. Notice how the 3 has been marked.

**TEST 5 — SECTION A**

1. <sup>1</sup>spring is here. \_\_\_\_\_ 1
2. <sup>1</sup>does <sup>2</sup>snow <sup>3</sup>fall <sup>4</sup>in <sup>5</sup>winter? \_\_\_\_\_ 2
3. <sup>1</sup>moss, <sup>2</sup>ferns, and <sup>3</sup>trees \_\_\_\_\_ 3
4. <sup>1</sup>grow <sup>2</sup>in <sup>3</sup>brazil. \_\_\_\_\_ 4
5. The <sup>1</sup>baby <sup>2</sup>likes <sup>3</sup>bill, <sup>4</sup>mary, \_\_\_\_\_ 5
6. <sup>1</sup>and <sup>2</sup>the <sup>3</sup>dog. \_\_\_\_\_ 6
7. The <sup>1</sup>abbreviation <sup>2</sup>for <sup>3</sup>september \_\_\_\_\_ 7
8. <sup>1</sup>is <sup>2</sup>always <sup>3</sup>sept. \_\_\_\_\_ 8
9. Last <sup>1</sup>Friday <sup>2</sup>a <sup>3</sup>friend, <sup>4</sup>Miss <sup>5</sup>smith, \_\_\_\_\_ 9
10. <sup>1</sup>sailed <sup>2</sup>for <sup>3</sup>europe. \_\_\_\_\_ 10
11. Many <sup>1</sup>people <sup>2</sup>travel <sup>3</sup>through <sup>4</sup>the \_\_\_\_\_ 11
12. <sup>1</sup>Andes <sup>2</sup>mountains <sup>3</sup>during <sup>4</sup>vacations. \_\_\_\_\_ 12
13. <sup>1</sup>Father <sup>2</sup>said, <sup>3</sup>"you <sup>4</sup>may <sup>5</sup>go, too." \_\_\_\_\_ 13
14. Last <sup>1</sup>tuesday <sup>2</sup>i <sup>3</sup>visited <sup>4</sup>my \_\_\_\_\_ 14
15. <sup>1</sup>uncle <sup>2</sup>John <sup>3</sup>in <sup>4</sup>the <sup>5</sup>city. \_\_\_\_\_ 15

**DIRECTIONS:** In the story below the line, numbers 16, 17, 18, etc., indicate places where punctuation may or may not be needed. In the answer row which has the number used in the story, make a black mark within the pair of dotted lines under the punctuation needed. If none is needed, mark N. Use the same answer row to show all punctuation needed at any one number in the story.

Correct Test Booklet  
and Answer Sheet Mark

	.	,	?	"	N
1.	•	•	•	•	•
2.	•	•	•	•	•
3.	•	•	•	•	•

SAMPLE: B. Yes<sub>1</sub> I shall go<sub>2</sub> to your party<sub>3</sub>

A comma is needed at 1 after the word, yes, in Sample B, so a mark has been made under the comma in answer row 1. A mark under N in answer row 2 shows that punctuation is not needed at 2 in the sample. A mark under the period in answer row 3 shows the punctuation needed at 3 in the sample.

### TEST 5 — SECTION B

Jack wanted a dog<sub>16</sub> to play  
with<sub>17</sub> Therefore<sub>18</sub> he told his  
father about it.<sub>19</sub>

Jack said,<sub>20</sub> Father<sub>21</sub> will you  
buy a dog<sub>22</sub> for me to play  
with<sub>23</sub>"

His father said<sub>24</sub> "If I buy you  
a dog<sub>25</sub> to play with<sub>26</sub> what  
will<sub>27</sub> you name him<sub>28</sub>

In reply<sub>29</sub> Jack said that he'd  
name him Spot.<sub>30</sub>

	.	,	?	"	N
16.	•	•	•	•	•
17.	•	•	•	•	•
18.	•	•	•	•	•
19.	•	•	•	•	•
20.	•	•	•	•	•
21.	•	•	•	•	•
22.	•	•	•	•	•
23.	•	•	•	•	•
24.	•	•	•	•	•
25.	•	•	•	•	•
26.	•	•	•	•	•
27.	•	•	•	•	•
28.	•	•	•	•	•
29.	•	•	•	•	•
30.	•	•	•	•	•

**DIRECTIONS:** In the following sentences, mark as you have been told the number of each correct word.

**TEST 5 — SECTION C**

31. Mother (<sup>1</sup> may <sup>2</sup> can) I go out? —31
32. (<sup>1</sup> Lemme <sup>2</sup> Let me) have the ball. —32
33. I (<sup>1</sup> knowed <sup>2</sup> knew) the candy was hard. —33
34. The candy was given to Robert and (<sup>1</sup> him <sup>2</sup> he). —34
35. The teacher will (<sup>1</sup> learn <sup>2</sup> teach) us. —35
36. We (<sup>1</sup> sung <sup>2</sup> sang) the song. —36
37. She (<sup>1</sup> ate <sup>2</sup> et) her spinach. —37
38. Letters were mailed to (<sup>1</sup> they <sup>2</sup> them). —38
39. Mother bought the candy for (<sup>1</sup> us <sup>2</sup> we) girls. —39
40. He (<sup>1</sup> don't <sup>2</sup> doesn't) ride his bicycle. —40

✓ For each statement given below that is a complete sentence, mark YES; for each that is not, mark NO.

41. The boy went to the play-ground. YES NO 41
42. When he returns. YES NO 42
43. She likes to read. YES NO 43
44. Are they coming? YES NO 44
45. The man of whom you were speaking. YES NO 45
46. The speech was given in the lecture room. YES NO 46
47. Near the source of the river and by the waterfall. YES NO 47
48. Month by month he continued to advance. YES NO 48
49. In order to provide the necessities of life. YES NO 49
50. Calling to his dog and running at top speed after his friends. YES NO 50

**STOP**

NOW WAIT FOR FURTHER INSTRUCTIONS

**DIRECTIONS:** Each line in this test contains four spelling words and the word, None. These words are numbered 1, 2, 3, 4, and the None is numbered 5. In some of the lines, one word is misspelled. In others, no word is misspelled. If there is a misspelled word, mark its number. If no word is misspelled, mark the 5.

		Correct Test Booklet Mark	Correct Answer Sheet Mark
SAMPLE: C.	1 now 2 just 3 come 4 ron 5 None	4 c	C 1 2 3 4 5
SAMPLE: D.	1 go 2 see 3 do 4 may 5 None	5 D	D 1 2 3 4 5

### TEST 6

51.	1 could	2 warme	3 inside	4 mile	5 None	_____	51
52.	1 sure	2 yellow	3 quick	4 pick	5 None	_____	52
53.	1 gess	2 scare	3 pocket	4 trade	5 None	_____	53
54.	1 north	2 broak	3 easy	4 because	5 None	_____	54
55.	1 teeth	2 push	3 party	4 weare	5 None	_____	55
56.	1 coast	2 blind	3 twomorrow	4 alive	5 None	_____	56
57.	1 dash	2 bridege	3 front	4 pasture	5 None	_____	57
58.	1 twice	2 knee	3 drank	4 allmost	5 None	_____	58
59.	1 lady	2 drum	3 asleep	4 teacher	5 None	_____	59
60.	1 ofen	2 wheel	3 shake	4 open	5 None	_____	60
61.	1 toad	2 expeckt	3 ribbon	4 quite	5 None	_____	61
62.	1 squirrel	2 parade	3 rattle	4 weigt	5 None	_____	62
63.	1 form	2 bud	3 adress	4 base	5 None	_____	63
64.	1 ditch	2 lisened	3 fever	4 leaving	5 None	_____	64
65.	1 mice	2 year	3 befor	4 slow	5 None	_____	65
66.	1 subgect	2 reduce	3 worry	4 oyster	5 None	_____	66
67.	1 thimble	2 opposite	3 machine	4 visiter	5 None	_____	67
68.	1 apron	2 cork	3 usal	4 extra	5 None	_____	68
69.	1 fingerprint	2 promice	3 dangerous	4 whenever	5 None	_____	69
70.	1 pudding	2 lonesome	3 noisy	4 streight	5 None	_____	70
71.	1 patient	2 victory	3 famus	4 invention	5 None	_____	71
72.	1 secund	2 cracker	3 jelly	4 flies	5 None	_____	72
73.	1 ninth	2 profit	3 sucess	4 future	5 None	_____	73
74.	1 conversation	2 asist	3 female	4 obedient	5 None	_____	74
75.	1 level	2 dentist	3 rejon	4 worst	5 None	_____	75
76.	1 gotten	2 arive	3 pavement	4 conduct	5 None	_____	76
77.	1 reward	2 bonnet	3 hatchet	4 sissors	5 None	_____	77
78.	1 particuler	2 orchard	3 frighten	4 ceiling	5 None	_____	78
79.	1 dramas	2 resemblance	3 varieties	4 benefited	5 None	_____	79
80.	1 importance	2 disturb	3 caution	4 probaly	5 None	_____	80



✓ Write the words which are pronounced.

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

**STOP** NOW WAIT FOR FURTHER INSTRUCTIONS

Grade \_\_\_\_\_  
Placement.....

### Elementary

## DIAGNOSTIC ANALYSIS OF LEARNING DIFFICULTIES

### 1. Reading Vocabulary

#### A. WORD FORM:

- 1-15 - Lower case words
- 16, 17, 18, 19 - Capitals
- 20, 21, 22, 23, 24, 25 - Miscell. type faces

#### B. WORD RECOGNITION:

- 26, 29, 31 - Gross differences
- 27, 28, 30, 32-45 - Initial sounds or endings

#### C. OPPOSITES:

- 46-68 - Basic vocabulary

#### D. SIMILARITIES:

- 69-90 - Basic vocabulary

### 2. Reading Comprehension

#### E. FOLLOWING SPECIFIC DIRECTIONS:

- 91, 95 - Simple directions
- 92, 98, 94, 96, 97, 98 - Directions, simple choice
- 99, 100 - Defin. and direct.

#### F. REFERENCE SKILLS:

- 101, 102 - Parts of book
- 103, 104 - Alphabetizing
- 105, 106, 107 - Table of contents
- 108, 109, 110 - Use of index

#### G. INTERPRETATION OF MEANINGS:

- 111, 117 - Topic or central idea
- 112, 113, 118, 119, 122, 123 - Directly stated facts
- 114, 115, 116, 120, 121 - Making inferences
- 124, 125, 126 - Organ. of topics
- 127, 128, 129, 130 - Sequence of events

### 3. Arithmetic Reasoning

#### A. NUMBER CONCEPT:

- 1, 2, 3, 4, 5 - Writing numbers
- 6, 7 - Writing money
- 8, 9, 10 - Roman numbers
- 11 - Whole numbers
- 12, 13, 14, 15 - Frac., dec., per ct.

#### B. SIGNS AND SYMBOLS:

- 16, 17, 18, 19, 20, 21, 22, 23, 24, 27, 28, 29, 30 - Signs
- 25, 26 - Abbreviations

#### C. PROBLEMS:

- 31, 32, 33, 34 - One-step
- 35, 36, 37, 38, 42 - Two-step
- 34, 36, 37, 38 - Sharing and averaging
- 39, 40 - Sq. and cubic measure
- 41 - Fraction
- 43, 44 - Percentage
- 45 - Ratio

### 4. Arithmetic Fundamentals

#### D. ADDITION:

- 46, 47, 48 - Simple combinations
- 47, 48 - Zeros
- 49 - Higher decades
- 50, 51 - Carrying
- 52, 53 - Column addition
- 53, 54 - Adding money
- 55 - Adding numerators
- 56, 58, 59, 60, 61 - Common denominators
- 57, 58, 59, 60, 61 - Adding mixed numbers
- 62 - Fractions and decimals
- 63, 64 - Writing decimals
- 65 - Denominate numbers

#### E. SUBTRACTION:

- 66, 67, 68, 69 - Simple combinations
- 70, 71, 72 - Borrowing
- 68, 69, 72 - Zeros
- 73, 74 - Subtracting money
- 75, 76 - Subtracting numerators
- 77, 78 - Common denominators
- 79, 80, 81 - Mixed numbers
- 82 - Fractions from decimals

#### E. SUBTRACTION: (Cont.)

- 83, 84 - Writing decimals
- 85 - Denominate numbers

#### F. MULTIPLICATION:

- 86, 87, 88, 89, 90, 91, 92, 93, 94 - Tables
- 87, 90, 93 - Zeros in multiplicand
- 92, 93, 94 - Zeros in multiplier
- 91, 92, 93, 94 - Two and three-place multipliers
- 95, 96 - Mult. with fractions.
- 97, 98 - Cancellation, fractions
- 99, 100, 101, 102 - Mixed numbers
- 103, 104 - Pointing off decimals
- 105 - Denominate numbers

#### G. DIVISION:

- 106, 107, 108, 109, 110, 111, 112, 113, 114 - Tables
- 108, 111, 114 - Zeros in quotient
- 115 - Remainders
- 116, 117, 118, 119, 120, 121 - Inverting divisors
- 121, 122, 123 - Mixed numbers
- 124, 125 - Pointing off decimals

### 5. Mechanics of English, and Grammar

#### A. CAPITALIZATION:

- 1, 2, 3 - First word of sentence
- 5, 9 - Names of persons
- 4, 10, 12 - Names of places
- 7, 14 - Day or month
- 8 - Abbreviation for month
- 13 - First word of quotation
- 14 - Pronoun "I"
- 15 - Title of person
- Over-capitalization

#### B. PUNCTUATION:

- 17 - Periods
- 18, 21, 24, 26, 29 - Commas
- 20, 28 - Quotation marks
- 23, 28 - Question marks
- Over-punctuation

#### C. WORDS AND SENTENCES:

- 31, 32, 33, 35 - Good usage
- 34, 38, 39 - Case
- 36, 37 - Tense
- 40 - Number
- 41-50 - Recognizing sentences

### 6. Spelling: (51-80) See profile

HANDWRITING: See profile

(CIRCLE ONE)  
Boy Girl

Name Last First Middle Grade Date of Test Month Day Year

School City Pupil's Age Month Day Year

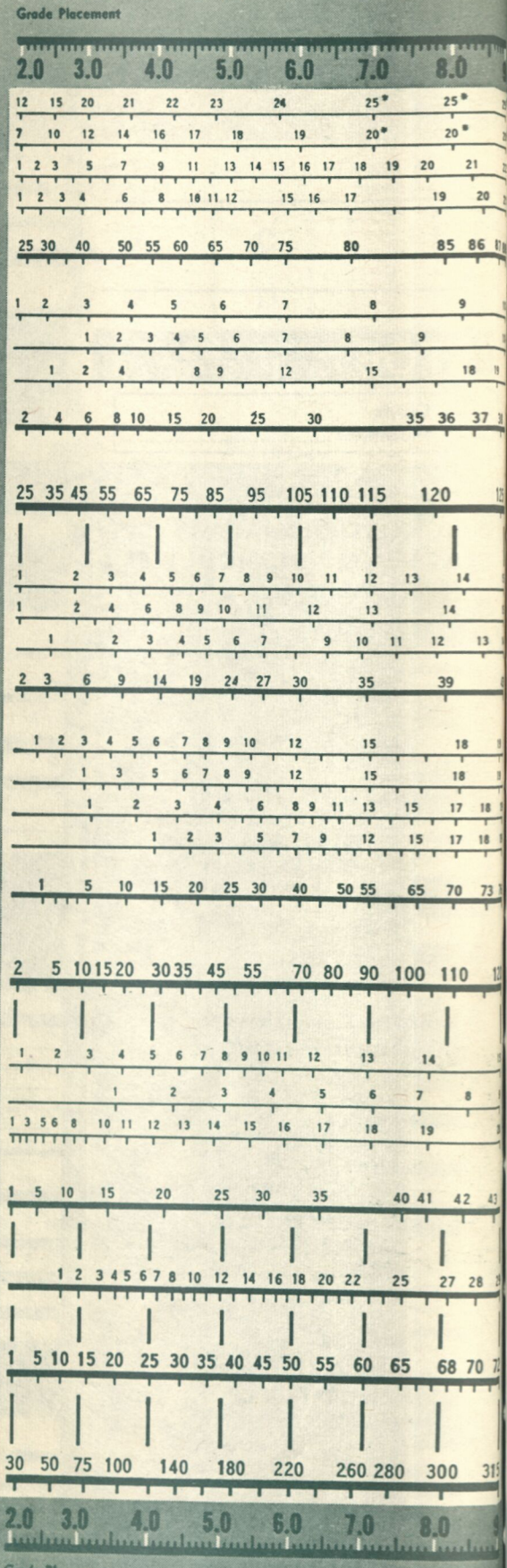
DEvised BY ERNEST W. TIEGS AND WILLIS W. CLARK Examiner.

See MANUAL for instructions.

TEST SECTION	POSSIBLE SCORE	PUPIL'S SCORE
<b>1. READING VOCABULARY</b>		
A. Word Form	25	
B. Word Recognition	20	
C. Meaning of Opposites	23	
D. Meaning of Similarities	22	
<b>TOTAL (A+B+C+D)</b>	<b>90</b>	
<b>2. READING COMPREHENSION</b>		
E. Following Directions	10	
F. Reference Skills	10	
G. Interpretations	20	
<b>TOTAL (E+F+G)</b>	<b>40</b>	
<b>TOTAL READING 130</b>		
<b>3. ARITHMETIC REASONING</b>		
A. Number Concept	15	
B. Signs and Symbols	15	
C. Problems	15	
<b>TOTAL (A+B+C)</b>	<b>45</b>	
<b>4. ARITHMETIC FUNDAMENTALS</b>		
D. Addition	20	
E. Subtraction	20	
F. Multiplication	20	
G. Division	20	
<b>TOTAL (D+E+F+G)</b>	<b>80</b>	
<b>TOT. ARITHMETIC 125</b>		
<b>5. MECH. OF ENGLISH, AND GRAMMAR</b>		
A. Capitalization	15	
B. Punctuation	10	
C. Words and Sentences	20	
<b>TOTAL (A+B+C)</b>	<b>45</b>	
<b>6. SPELLING</b>		
<b>TOTAL SPELLING</b>	<b>30</b>	
<b>TOTAL LANGUAGE 75</b>		
<b>Handwriting</b>		
<b>TOTAL TEST</b>	<b>330</b>	

Grade Placement  
Achievable Rank  
537

DIAGNOSTIC PROFILE (Chart Pupil's Scores Htg.)



\* When maximum scores are achieved, plot the score which most nearly conforms to Total Reading Grade Placement.