

THE EFFECT OF PROVIDING FOR THE NEEDS  
OF THE RETARDED GROUP THROUGH SOLVING  
THE PROBLEMS OF INDIVIDUAL CHILDREN

by

Mary J. Kadel

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## I. INTRODUCTION

### A. The Situation Regarding Retarded Children

1. Many Serious Problems Are Presented by Mentally Retarded Children. Much of the behaviour of retarded children can be attributed to their lack of ability to do the work required in the regular grade. Their limited powers of understanding cause them to become inattentive, disobedient, unruly or ungovernable. They make it difficult for the class to work at a healthy tension. They require three or four times as much attention as normal pupils. They do not receive the type of training adapted to their limitations. They cannot compete with children who have greater mental ability. This causes feelings of inferiority which often leads to compensations and conflicts. Dull or border-line children are more likely to play truant for they want to escape competition with children of higher mentality. They show more tendency toward delinquency than do normal children. They are often unable to inhibit wrong tendencies and cannot discriminate between right and wrong. These delinquencies provide outlets for them and furnish a mode of compensation for their failures in the class room.

2. Types of Retardation to be Dealt With. There are two types of retardation to be dealt with in our school.

system, namely, mental retardation and educational retardation. "Mentally retarded" children are those children whose mental development is below the level of the normal children of that chronological age. According to this concept, any child whose intelligence quotient is below one hundred would be mentally retarded. If a child ten years old chronologically has a mental age of ten years on the Binet-Simon test, he has average mental ability. A ten year old child with a mental age of eight years, five months is two years, five months retarded. Some causes of mental retardation are:

- a. Deficiency of nerve cells.
- b. Structural defects in brain tissue.
- c. Imperfect development of nerve cells.

"Educationally retarded" children are those children who are below the school grade of children of their chronological age. Their general educational development is below that of the children of their chronological age due to such factors as absence from school, late entrance into school, illness, neglect, frequent transfers, poor teaching or lack of application. They are not always deficient in inherent capacity. Physical defects, such as myopia, partial deafness, adenoids and myxedema, result in backwardness.

<sup>1</sup>  
Doctor W. J. Stillman relates that he had a severe attack of typhoid fever when he was seven years old. He states that

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<sup>1</sup>  
W. H. Smith, All the Children of all the People (New York: MacMillan Company, 1912), pp. 85-89.

he seemed to be a model of stupidity until he was fourteen years of age as a result of this illness. His thinking powers were so completely suspended that he was repeatedly flogged at school for not comprehending the simplest things. The "mental fog" broke away suddenly. His class examination was recorded as the most brilliant which the academy had noticed for many years.

3. The Educational Needs of Retarded Children. These children need to be properly classified so they will be able to do the work which is suited to their limited capacities. They need to be with children who have about the same difficulties to challenge their best efforts.

The best educational provision for the retarded children is obtained through providing a differentiated curriculum for them. When mentally retarded children have not been forced to meet standards set for normal children, they have been known to remain in school to a later age than they otherwise would, to acquire ability to meet life situations outside of school, and to progress with feelings of satisfaction due to successful accomplishment instead of leaving in dismay at failure or discouragement over inability to cope with situations beyond their grasp.

From Table I, page 4, we find that 3.8 per cent of the children examined in a Public School Psycho-Educational Clinic are retarded, 25.2 per cent are backward and 28.1 are borderline.



TABLE I  
 DIAGNOSIS OF 2774 CHILDREN INDIVIDUALLY EXAMINED<sup>1</sup>  
 IN A PUBLIC SCHOOL PSYCHO-EDUCATIONAL CLINIC  
 INTELLIGENCE DIAGNOSIS

	Number of Boys	Per Cent	Number of Girls	Per Cent	Both Sexes Number	Per Cent
Normal	78	4.0	13	1.5	91	3.2
Retarded	87	4.4	21	2.5	108	3.8
Backward	556	28.5	145	17.5	701	25.2
Borderline	571	29.3	210	25.3	781	28.1
Diagnosis deferred	57	2.9	35	4.2	92	3.3
Mentality undetermined	5	0.2	2	0.2	7	0.2
Morons	390	20.9	254	30.7	644	23.2
Imbeciles	198	19.1	144	17.4	342	12.3
Idiots	5	0.2	3	0.3	8	0.2
Total feeble-minded	593	30.4	491	48.4	994	35.7

<sup>1</sup>

J. E. W. Wallin, The Education of Handicapped Children  
 (Chicago: Houghton, Mifflin Company, 1924), p. 346.

The criteria for placing a child in a special class for mentally retarded children will depend somewhat on conditions and facilities at hand. If there are few special classes and many children to be accommodated, only the more serious cases of defect can be segregated. In some school systems accommodations are provided for all children with I. Q.'s below seventy, or for pupils who are mentally retarded more than three years at the age of twelve or more than two years at the age of eight or nine. School records showing much grade repetition for causes other than illness, low school marks or inferior information and orientation are other criteria.

Health education should be an important part of the school program for retarded children. Many of these children receive little or no attention to their health habits in their homes. Since safety is fundamentally a matter of judgment, poise and muscular co-ordination, and since these are lacking in many retarded children, emphasis should be placed on safety habits. Units of work on safety involving safety in the home, school and community should also constitute a part of the program for retarded children.

Sensory training should be an integral part of the education of retarded children. By means of suitable impressions through the eye, ear, skin, muscle, nose and mouth the range and delicacy of the sensorium are increased, the brain is made more receptive, motor response is encouraged, and a basis is supplied for future thoughts and ideas.

Many of the children need work of a manual nature. If they have a special ability, it should be trained. Manual work appeals to deep-rooted instincts and interest, such as play, constructiveness, curiosity, activity and muscular exercise. Movement satisfies a fundamental biological need. It is through movement that children acquire a knowledge of the world.

In teaching handwork to mentally retarded children, the type of work used should bear a direct relation to the age and mental condition of the child. A boy of seven or eight years chronologically with only a five year old mentality will not like kindergarten work. Handwork that awakens his interest and develops his muscular control and brain center co-ordination should be chosen. Directions for handwork should be given simply. These children must be shown many times how to perform any new process.

Individual instruction should be given in nearly all cases. It is important to remove anxiety due to pressure. Success in school work should be made possible, even if it is a success in limited undertakings only.

#### B. The Problem

The problem of mentally and educationally retarded children as indicated in this introduction led the writer to study the possibilities of attempting to provide for the needs of the retarded group by solving the problems of the individuals within the group.

## II. HOW THE PROBLEM IS BEING MET

### A. Special Schools and Classes

In order to guide the writer in formulating her solution, a study was made of the ways in which the problem is being met by others engaged in working with retarded children.

Many school systems are trying to solve this problem by establishing special classes or so called opportunity rooms. According to Table II, page 9, we notice that there are thirty-nine cities in Massachusetts, twenty-seven cities in New Jersey, twenty cities in Ohio, and eight cities in Indiana that have schools and classes for mentally retarded children. Indiana is thirteenth on the list.

Oakland, California, is a typical city in which special classes are formed to meet the needs of the retarded group of children. The course of study for these retarded children provides for variation in content and in the time required to do the work. A more adequate description follows.

The situation regarding the education of retarded children of Terre Haute, Indiana, is also discussed because this thesis is a summary of the methods used and the results obtained by the writer during the five years in which she

was engaged in teaching retarded children in this city. The educational program in the elementary schools of this city from 1923 to 1930 was sufficiently flexible to meet the needs of children of normal capacity and also those incapable of doing the work required in the regular grade. Special classes were organized in which differential training met the particular requirements of the retarded group.

TABLE II  
NUMBER OF CITIES IN EACH STATE WHICH HAVE  
SCHOOLS AND CLASSES FOR MENTALLY RETARDED CHILDREN

State	Number of Cities	State	Number of Cities
Arizona	1	New Hampshire	3
California	13	New Jersey	27
Colorado	3	New York	38
Connecticut	12	North Carolina	5
Florida	1	North Dakota	1
Georgia	2	Ohio	20
Illinois	11	Oklahoma	4
Indiana	8	Oregon	1
Iowa	10	Pennsylvania	24
Kansas	5	Rhode Island	3
Kentucky	3	South Carolina	3
Louisiana	1	South Dakota	1
Maine	1	Tennessee	1
Maryland	2	Texas	7
Massachusetts	39	Vermont	2
Michigan	16	Virginia	5
Minnesota	9	Washington	7
Missouri	3	West Virginia	3

TABLE II. (Continued)

Montana	• 1	• Wisconsin	• 17
Nebraska	• 2	• Wyoming	• 1
	•	• District of Columbia	• 1
	•		•
Total	• 143	• Total	• 174

Total number of cities, 317

Of the 317 cities which reported schools and classes, 236 reported only classes, 45 reported schools only and 34 reported schools and classes. New York has 366 classes; Chicago, 162; Philadelphia, 157; Detroit, 128. 79 of the 317 cities reported the organization of schools, 61 had only 1 school. Cleveland had 20 schools, with an enrolment of 1,684 pupils. St. Louis in the 13 schools reported 648 pupils. Los Angeles reported 1,149 pupils in the 10 schools. Philadelphia reported the largest school, and the next largest was Cincinnati.

Fifteen states have enacted special laws designed to promote school education of handicapped children.

These laws were enacted in the following years:

1911, New Jersey; 1915, Minnesota; 1917, Wisconsin; 1917, New York; 1917, Illinois; 1919, Missouri; 1919, Pennsylvania; 1919, Massachusetts; 1919, Wyoming; 1921, Connecticut; 1921, Utah; 1921, California; 1927, Oregon; 1922, Louisiana; 1927, Alabama.

That provision for mentally retarded children is not entirely satisfactory is evidenced by Arthur B. Lord in<sup>2</sup> the Journal of the National Educational Association,

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1

Committee on Special Classes, Special Education-The Handicapped and the Gifted, Washington, D. C. (1931), p. 443.

2

Arthur B. Lord, "Wanted: Teachers for Special Education," Journal of the National Educational Association, Washington, D. C., Vol. XXI, (June, 1932), p. 178.



June 1932. He states that there are 450,000 pupils mentally retarded in the elementary schools of our nation. They are retarded to such a degree that they require special education. Less than thirteen and one-half per cent of these children are enrolled in special classes. In Massachusetts they have fifty per cent of these children so cared for. Fifty additional classes were opened during 1931. This is evidence that the cities and towns are complying with the law which requires the establishment of special classes for children three years retarded in mental development in cities and towns where there are ten or more such children.

Some states have not made provisions for the retarded group of children. Forty states have established classes. The following states are doing outstanding work in trying to fit the schools to the needs of the pupils: New York, Pennsylvania, Ohio, Michigan, Minnesota, New Jersey and California. Several state departments of education have appointed directors or supervisors for special education, including New York, Pennsylvania, Wisconsin and Minnesota.

The following table gives additional data regarding the number of classes, pupils and individuals concerned with special schools and classes.

TABLE III

SPECIAL SCHOOLS AND CLASSES IN CITIES  
OF TEN THOUSAND POPULATION AND MORE IN THE UNITED STATES<sup>1</sup>

Location	Number of Classes	Number of Pupils	Number of Individuals Connected with Special Schools and Classes
Arizona	1	8	1
California	210	4351	389
Colorado	21	454	21
Connecticut	82	1352	86
District of Columbia	24	349	29
Florida	2	41	2
Georgia	30	461	32
Illinois	189	3535	188
Indiana	28	491	32
Iowa	38	520	40
Kansas	10	192	13
Kentucky	21	368	22
Louisiana	13	190	36
Maine	2	36	3

1

United States Department of the Interior, Special  
Schools and Classes in Cities of 10,000 Population and More  
in the United States, Bulletin No. 7, (1930).

TABLE III. (Continued)

Maryland	74	1109	79
Massachusetts	158	2435	208
Michigan	219	4867	254
Minnesota	122	1161	143
Missouri	48	744	63
Montana	2	30	2
Nebraska	13	238	14
New Hampshire	6	124	6
New Jersey	182	1714	225
New York	579	10550	459
North Carolina	24	446	25
North Dakota	4	48	4
Ohio	276	5589	304
Oklahoma	30	631	30
Oregon	23	374	30
Pennsylvania	379	7166	416
Rhode Island	28	580	33
South Carolina	11	147	11
South Dakota	3	47	50
Tennessee	6	110	11
Texas	14	269	16
Vermont	3	44	3
Virginia	21	379	22
Washington	71	489	75
Wisconsin	58	847	66
Wyoming	6	85	7
Grand Total	3075	55154	3817

B. A Study of the Way in Which Oakland, California,  
Provides for the Needs of the Retarded Group of Children.

In Oakland, California, they provide for the needs of the individual pupils by having "limited" and "atypical" classes. The treatment of "limited" class pupils involves two alternatives:

- a. That they move up through the grades at a slower rate of progress but fulfilling standard requirements.
- b. That, after attaining reasonable accomplishment in reading in the first and second grades, they progress through the grades, but take only such portions of the curriculum as seem most essential to their needs and possibilities.

Which of the two methods is better is an open question, but in Oakland, the latter is favored. The "limited" classes are composed of pupils from one to three years over-age for the grade; the average I. Q. of the class is usually in the eighties.

Special "limited" classes are planned from the first grade throughout the school course. The pupils pass from the limited first to the limited second to the limited third. They progress, not because they have covered standard first, second or third grade work, but because they ought to pass up through the grades, getting as much as they can as they advance, and finally reaching some of the features of upper-grade work which are most essential in preparing this type of pupil for industrial life and

citizenship. The problem is to give the children the best education which the schools can give up to the age of sixteen.

The "atypical" classes are organized for the defective or borderline pupils. They enroll about fifteen or sixteen pupils in each class. The instruction is largely individual. No child is placed in this class until:

- a. Actual trial proves that he is unable to profit by instruction in a regular class.
- b. The mental test shows inferior mentality.

The purpose of the special class instruction is:

- a. To give as much of the standard curriculum as the child can take with reasonable effort.
- b. To give more work of manual nature than he can be given in regular classes.
- c. To discover and to train any special ability the child may show which would enable him to become a useful member of society, partially or wholly self-supporting.
- d. To instill proper attitudes towards problems of citizenship and toward life in general.

No definite course of study is fixed. All pupils are taught writing, language, arithmetic and other subjects in so far as their capacities permit. The following are types of manual work: woodwork, toy making, rug making, basketry, brush making, clay modeling.

This type of special class relieves the normal class of a drag. The pupil, doing work adjusted to his particular

needs, is more contented and has a better chance of developing whatever ability he has.

The limited class pupil is allowed to graduate from the eighth grade in Oakland. The certificate is marked "promoted on special class work".

C. The Opportunity Rooms in Terre Haute, Indiana.

1. Limited Sized Class. Most of these classes enrolled from fifteen to eighteen children. In nearly all of the rooms the children were taken from the building in which the special room was located. In some of the rooms, the children from adjacent schools were admitted, if there were not enough children in that building to organize a class.

2. Adequate Equipment. Adequate equipment and supplies made it possible to provide for the needs of retarded children. Work benches and the necessary tools to make such articles as towel racks, toys, footstools, book ends and flower boxes were included among the supplies provided. Raffia was provided for mats, rings for a "ring toss" game, picture frames, sewing bags and coat hangers. Other supplies consisted of bristles or fibres for brushes. Roving was provided for weaving rugs on a large loom. Through the sale of the rugs and other articles made by the children, some of the money expended for materials was recovered.

3. Suitable Grade Limits. Although there was not a rigid curriculum to follow, there was a sequence of steps in special work. There was constant advance in the subjects

taught. There were pre-primer groups, first, second, third and occasionally a fourth grade group in reading, arithmetic and spelling. As soon as a pupil showed ability to succeed in the next higher group in any subjects, he was transferred to that group regardless of his ability in other subjects.

The units of work were short. Units which were practical for these children were chosen, as units on health, safety instruction and sense training.

### III. DESCRIPTION OF METHODS

#### USED BY THE WRITER IN HER OPPORTUNITY ROOM

##### A. Classification of Pupils

The selection of the atypical children for the special classes was made by the use of the Stanford<sup>1</sup> Revision of the Binet-Simon Tests. Children who had an intelligence quotient of seventy or below or were seriously retarded pedagogically were recommended for these classes. Each child was placed where he would fit in best with regard to his academic abilities.

Generally speaking the following plan was used:

- Group III Primary, mental ages 4-7 years.
- Group II Intermediate, mental ages 7-9 years.
- Group I Advanced, mental age 9-10.

##### B. Principles Underlying Teaching Procedure

###### 1. Principles.

- a. Elicit children's interest to insure enthusiastic cooperation and maximal output of effort.
- b. Develop the collective instinct.

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<sup>1</sup>  
Lewis M. Terman, The Stanford Revision of the Binet-Simon Tests (Chicago: Houghton, Mifflin Company, 1916).



- c. Appeal to deep-rooted instincts and interests, as play, constructiveness, curiosity, acquisitiveness, activity and muscular exercise through manual activities.
- d. Secure automatic response by short and varied drill. Start with something children know, so that the drill can start with a spirit of success. Only after much repetition and drill will these children acquire a skill.
- e. Give individual instruction to the children in small groups. Coach intensively and drill in the subjects in which they are particularly weak.

Allow the interests to guide the activities of the children. Let the selection of the subject matter be determined by its usefulness.

2. Habits to Establish in Retarded Children.

- a. Attention. Strengthen the means of securing and maintaining attention by varying the teaching procedure.
- b. Concentration. Instill work habits to overcome distraction.
- c. Emotional control. Fix habits of emotional control by stimulation on the part of the teacher, through encouragement, commendation, cheerfulness and helpfulness.
- d. Self-appraisal. Develop in the children the

ability to judge for themselves whether they are doing well.

- e. Co-operation. Develop in the children the ability to get along well with others.

C. Units Which Secured Adequate  
Control of Habits Needed in Life Situations

1. Health Instruction.

- a. Through establishing right habits. One whose mental faculties work slowly or are below normal should more than any other person have good health. Consequently, health and hygiene education were made an important part of the school program for retarded children. These children should come to feel that the joy of living, as well as the ability to make a living depends largely upon the best health possible. Many of the slow-learning children receive in the home little or no attention to their health habits; the responsibility for their health falls to the school.
- b. The outstanding national, state and local health laws were included in the curriculum. When the mentally retarded child leaves school, he should have knowledge and respect for quarantine laws, vaccination laws, pure food laws and laws relating to sanitation.

c. Investigation of healthful procedure revealed that the following rules were practicable for retarded children. After a study of topics indicated, therefore, the children formulated in class such rules as the following:

(I). Care of the mouth.

(A). Keep pens, pencils and coins out of the mouth.

(B). Do not moisten finger when turning pages of a book.

(C). Do not use a public drinking cup.

(D). Do not eat after another person unless the utensils are washed first.

(E). Do not spit on the walk or school ground.

(F). Visit the dentist often to keep your teeth in good condition.

(II). Instruction in the selection of food and drink.

(A). Eat green vegetables daily.

(B). Eat fresh fruit every day.

(C). Eat very little candy, Too much sugar may harm the stomach or cause the teeth to decay.

(D). Chew each mouthful of food well.

(E). Drink four or more glasses of mild<sup>k</sup> daily.

(F). Drink six or more glasses of water each day.

(G). Be happy at meal time.

(III). Rules concerning health and eating.

(A). Eat at a regular time each day.

(B). Have a balanced diet.

(C). Chew the food well.

(D). Be sure the hands are clean before food is handled.

(E). Drink milk or cocoa every day. No tea or coffee.

(F). Wash fruit before eating it.

(G). Drink four to six glasses of water each day.

(H). Eat plenty of bulky foods, fruits and vegetables.

(IV). Care of the eyes.

(A). Protect your eyes from strain, strong light or dust.

(B). Keep the proper distance between work and the eyes, about twelve to fifteen inches.

(C). See that the light comes from the left.

(D). Do not read print that is too fine.

(E). Use your own towels.

(F). Avoid direct light rays.

(V). Care of the ears.

(A). Do not try to clean your ears with a hair pin or sharp instrument.

(B). Wash your ears daily.

(VI). Care of the nose and throat.

- (A). Keep away from crowded places when you have a cold, cough or sore throat.
- (B). Stay away from people who are suffering from colds.
- (C). Cover the nose when you sneeze, cough or yawn.

(VII). Care of the hair.

- (A). Keep the hair clean.
- (B). Keep the hair well brushed and combed.
- (C). Use your own brush and comb.

(VIII). Care of the skin.

- (A). Keep the skin clean.
- (B). Do not use water that others have washed in.
- (C). Use your own towel.
- (D). If any eruptions appear, investigate the cause.
- (E). Skin trouble is often caused by faulty digestion.

(IX). Sleep.

- (A). Regularity is needed for restful sleep.
- (B). The proper amount is eleven hours for children seven to nine years; ten hours, nine to twelve years; nine hours, twelve to sixteen years.
- (C). Proper sleeping conditions are necessary, clean, frequently aired bed clothing,

fresh air and clean night garments.

(D). Sleep in a quiet room.

(E). Correct posture during sleep is urged.

(X). Posture.

(A). Have a correct sitting, standing and walking position.

(B). Use posture charts or mirrors to judge posture.

(XI). Exercise.

(A). Play in the open air at least two hours a day.

(B). Have light exercise only after meals.

2. Instruction in Health Was Given in the Following Ways:

a. Health instruction was stressed through the use of daily health inspection cards and emphasis on correct posture.

b. The physical education stressed games and healthful exercises on the points included in this outline.

c. A picture show based on healthful living was made by the children.

d. Definite instruction was given and rules were formulated by the children.

e. In order to keep the work concrete, booklets containing health rules were made.

3. Emphasis of Safety Habits. Safety first is fundamentally a matter of judgment, poise and muscular

co-ordination. These are qualities notably lacking in many retarded children. Very often when these children see danger, their muscles refuse to obey promptly.

a. Outline of items to be taught.

(I). Accidents are caused by:

(A). Carelessness of pedestrians.

(1). Crossing the street without looking both ways.

(2). Running across the street. There is danger of stumbling or tripping.

(3). Playing in the street.

(4). Automobiles, trucks, wagons and street cars cannot stop instantly.

(II). Effect of accident.

(A). On the person.

(1). He is sometimes killed.

(2). It causes pain or discomfort.

(3). He is sometimes crippled, temporarily or permanently.

(B). On the rest of the family.

(1). It causes unhappiness and worry.

(2). Often the family must pay the doctor and hospital bills.

(3). It causes a nervous strain.

b. Information regarding emergencies and first aid.

(I). Treatment of wounds.

(A). Treat with antiseptics any wound however slight, for it may be a

source of infection.

- (B). Call the doctor in all cases of serious accidents or injuries.

c. Home and community hygiene.

- (I). Homes should be healthful places.

- (A). By keeping them clean.
- (B). By keeping them well ventilated.
- (C). Health precautions protect the community and the individual.

- (II). Board of health contributions to our well being.

- (A). Streets are kept clean for us.
- (B). Garbage is collected, so citizens are protected from the evils which may arise from neglected refuse.
- (C). Food is inspected.
- (D). Precautions are taken to protect the food and water supply from sewage.
- (E). The Board of Health enforces quarantine laws.
- (F). Visiting nurses give their services to rich or poor, devoting their time to protect the health of the community.

d. Safety in the school.

- (I). Avoid pushing and shoving in halls and stairways.
- (II). Know the following rules for fire drill:
  - (A). There should be no pushing.



(B). Walk fast.

(C). Avoid talking.

(III). Exercise care at drinking fountains.

e. Safety in the home.

(I). Items to be taught.

(A). Keep the floors clear of toys and articles over which one might fall.

(B). Keep holes in rugs and carpets mended.

(C). Fill in holes in sidewalks and floors.

(D). Exercise care in climbing up to reach things on high shelves.

(E). Use an electric iron, pad or toaster carefully. Do not walk away and allow it to remain turned on.

(F). Know poison labels.

(G). Know where to go when in need of advice from a doctor, lawyer or minister.

(II). Some ways of preventing fires.

(A). Do not play with matches.

(B). Keep matches in a metal box, or use safety matches.

(C). Be sure a match is entirely out before you throw it away.

(D). Keep cleansing fluids away from a flame.

(E). Know how to call the fire department.

(F). Never use water on gasoline or kerosene fire.

f. Description of the method used in teaching the safety unit.

(I). Aims:

- (A). To help the children acquire habits of safety.
- (B). To help them to help others to acquire safety habits.
- (C). To show them what carelessness and ignorance cost in lives, injuries, health, happiness and progress.

(II). Presentation. In order to arouse interest, I asked the children to bring to class a story of an accident. The story was discussed according to:

- (A). Kind of accident.
- (B). People involved.
- (C). Cause.
- (D). Results.
- (E). How it could have been avoided.

(III). The following information was brought out:

- (A). The greater number of accidents had been caused by:
  - (1). Speeding.
  - (2). Running instead of walking across the street.
  - (3). Jay-walking on the highways.
- (B). The greater percentage of accidents happened to children.

(C). Accidents could have been avoided if the people had not been careless and ignorant of traffic rules.

Statistics showing the great number of pedestrians who were killed in one year, (about ten thousand) aroused great interest and helped the children realize that they must play a definite part in the "Safety First" campaign.

Here is a list of the things we decided we could do to make the highways safe:

1. We will not play in the street.
2. We will not ride a bicycle on the sidewalk.
3. We will not play in the railroad yards.
4. We will not jump on wagons or cars.
5. We will not run in front of a street car or automobile.
6. We will hold an umbrella so that it will not obstruct our view.
7. We will not cross the street in the middle of the block.
8. We will not stand in the street while waiting for the street car.
9. We will look both ways before we cross the street.
10. We will wait for the traffic signal.
11. We will help younger children on the highways.
12. We will walk up and down steps, one step at a time.

The following exercises were used as a check in

our Safety Lessons.

Choose the right word and draw a line under it.

1. The red light means (stop, go).
2. The safety zone is for (people, automobiles).
3. The (milkman, fireman) puts out fires.
4. It is (careless, safe) to keep paper in the basement.
5. The policeman is our (enemy, friend).
6. On the sidewalks we should keep to the (right, left).
7. Keep matches in a (metal container, a paste-board box).
8. It is safe to play (in the street, in a yard or the playground).
9. When you get off a car look (only one way, both ways).
10. We (should, should not) keep a cover on a garbage can.
11. Tin cans and rubbish (should, should not) be picked up.
12. We should go up the stairs (one step at a time, two steps at a time).
13. We should handle sharp pointed things (carelessly, carefully).
14. We cross the street (at the corner, any place).

## Signs in Common Use That Children Should Know

It depends on local conditions just what signs children should learn. Children should be encouraged to report any new sign which they see. They should be able to read the following signs which are in common use.

Some of the following signs were used in a flash card drill. Others were made with crayons or cut-out letters and pasted on cardboard. Some of the signs were used in the sand box for our safety project.

ALLEY	NO ADMITTANCE
BELL OUT OF ORDER	NO PARKING
BOX OFFICE	NO HELP WANTED
BOYS WANTED	OFFICE
CITY HALL	OFFICE HOURS 9-12 A.M.
COAT ROOM	OFFICE CLOSED
DANGER	PARKING, 30 MINUTES
DANGER. DRIVE SLOWLY	PLEASE CLOSE THE DOOR
DANGER. LOOK OUT FOR CARS	POISON
DENTIST	POST NO BILLS
DETOUR	PRIVATE
DOCTOR	PRIVATE OFFICE
ENTRANCE	PUSH
EXIT	PULL
FIRE ESCAPE	RAILROAD CROSSING
FOR FIRE, RING ALARM	REST ROOM
FOR RENT	ROOMS TO RENT
FOR SALE	SAFETY FIRST

GIRLS WANTED	SAFETY ZONE
HANDLE WITH CARE	SCHOOL. DRIVE SLOWLY
HANDS OFF	STOP
HELP WANTED	STOP, LOOK, LISTEN.
HOLIDAY	STREET CLOSED
HOSPITAL ZONE. QUIET	TICKET OFFICE
KEEP OUT	TO RENT
KEEP TO THE RIGHT	USE NEXT DOOR
LABORERS WANTED	WAITING ROOM
LIGHT HOUSEKEEPING ROOMS	WALK IN
LOOK OUT FOR FRESH PAINT	WATCH YOUR STEP
MEASLES	WET PAINT
MEN WANTED	WHOOPING COUGH

4. Sense Training. A normal child secures sense training from his experiences in play and in the manipulation of materials, but the retarded child has to have his experiences provided for him. Definite training will develop his sensory consciousness and increase his attention, memory and perception. Materials for sense training should be those used by children in their ordinary play and work. There should be a daily period of sense training with necessary care to provide experiences in progressive steps. The following outline includes expected outcomes and games which were used to develop the senses.

**Expectations:**

Some range of observation.

Some discrimination.

Some comparison.

Methods used to develop the senses.

Sight.

- a. Color. Play any game that necessitates the matching of colors. Use red, blue and yellow blocks. Give each child several blocks of each color. Draw three circles on the floor and place one block of each color in each circle. Let the children place their blocks in the circles matching the colors.
- b. Size. Display on a table or floor a group of objects, several types of objects and several sizes in duplicate of each; as books, balls, keys, boxes, pencils, sticks and cans. Have children pick out objects of identical size. See who can pick out the most in a given time.
- c. Form. Play any game that involves the distinguishing of similar forms. Use blocks, balls and simple objects in various sizes and several of each shape. Have objects about the room. Have children try to find as many hidden objects of a given form as possible in a given length of time.

Hearing.

- a. Tone. Blindfold a child. One at a time

the children say, "Good morning -----."

The blindfolded child must recognize the voice of the speaker. Several children count aloud, sing or recite a poem. The blindfolded child must guess how many there are.

- b. Distance. Blindfold a child and have him stand at an assigned place in the room. The other children scatter about the room. In turn each makes a noise, calls, taps an object, rings a bell, etc. The blindfolded child estimates the place in the room from which the noise has come. Older children may estimate the distance in steps.
- c. Materials. To tell, with eyes shut, what material has been tapped, wood, metal, stone or cardboard, drop different articles, at first dissimilar ones, such as a rubber ball and a key. Then drop things that are more alike, such as two coins of different value. The child first looks on and listens to the sound made by each article in falling, and then learns to distinguish the sounds with his eyes shut.

Touch. These games must be played either when blindfolded or with objects concealed in a bag or box.

- a. Size. The child has the opportunity to



- handle similar objects of several sizes (blindfolded or in a bag). After handling the various sizes he chooses one and describes it as "This is the biggest ball" or "This is the shortest pencil."
- b. Shape. Place objects of various shapes in a bag or box. Give the blindfolded child an object similar to one in the bag or box to handle in order to determine its shape. He then tries to find the object which is like it, in the box. Start with objects of two or three definite widely different shapes. Increase in difficulty by adding more objects, and those less varied in shape.
- c. Temperature. Help the children to learn to identify like temperatures by using materials as wood, glass, metal, also atmospheric temperatures, hot, warm, cool and cold.
- d. Quality. Select an object from a bag or box. Name the object and tell one of its qualities, as "This is a ball. It is hard." Place object of metal, paper, wood or glass in box or bag. Name it and tell its quality, "This is a box. It is made of paper." Blindfold one child, scatter about him and take some position other than standing,

i. e. stooping, standing on one foot, sitting on floor or kneeling. The blind-folded child determines who it is and in what position the child is.

Taste. The exercises to develop the senses of taste and smell are less practical and less useful than those preceding. However, they are necessary in order that the children may learn to protect themselves from harmful tastes and smells, as well as learn the terms identified with taste and odors.

Give exercises to enable the child to recognize, without seeing or touching, the taste of:

- a. Sugar, salt, chocolate, coffee, simple spices.
- b. Fruits and vegetables in season.
- c. Salt, sweet, acid, bitter flavors.
- d. Breads, white, brown, rye and cornbread.

Smell. Give exercises to enable the child to recognize by their smell, without seeing or touching.

- a. Flowers, fruits and vegetables in season.
- b. Spices, cloves, cinnamon, ginger and allspice.
- c. Simple medicines, camphor, peppermint and iodine.

## D. Techniques Used to Overcome Educational Retardation

1. Program in Silent Reading. In a constructive program in silent reading, the following techniques were used as a basis for organizing the material to develop the necessary skill.

### a. Comprehension.

(I). Types of work carried on to increase the vocabulary. Exercises as the following were given:

Opposites.

Increasing lists in a series.

Multiple choice.

Getting the main idea from the paragraph.

Sentence-Completion exercises based on the thought of a story.

Cancelling extra words in sentences.

Supplying omitted words.

Building paragraphs from disarranged sentences.

Matching exercises. Arrange parts of sentences so they will tell the story.

True and false. Change one word in each of these sentences to tell the truth.

### b. Remembrance.

(I). Reading with a specific purpose:

To find answers to questions of  
general information.

To follow directions.

To reproduce simple stories.

To illustrate the main thought of  
a story by a drawing, cutting  
or painting.

To learn the steps involved in  
remembrance.

c. Organization.

(I). Logical arrangement:

Mixed sentences arranged to  
form logical sequence.

Selecting pairs of related words.

d. Speed.

(I). Read and follow directions by some  
simple action.

(II). Increase perceptive span by flash  
card exercises.

(III). Read simple material under time limit.

It is difficult to select books of the simplest vocabulary difficulty but with the content corresponding to the maturity of the advanced group of children. Sometimes stories were selected from supplementary readers and magazines. Mimeographed copies were then made for each child. This method was more satisfactory than the use of text books not suited to the needs of this group.

### E. Techniques Used to Overcome Mental Retardation

Since the sense organs of mentally retarded children are less acute than those of normal children, they do not have the ability to interpret and to organize the sensations which they have. Therefore, they were given definite sense training in order that they might adapt themselves less slowly to new processes. It was important the writer felt that certain good eye habits become fixed as early in the school life as possible. Games that accustomed children to moving the eyes from left to right proved helpful. When they started to read, results were better because of the good eye habits that had been formed.

In training for correct eye habits, exercises which accustomed the children to moving the eyes from left to right were used. Groups of objects pasted on a line with a space before the next group also helped children to form the habit of seeing a group of things along a line at one time. Drills that seem too trivial for the average children were often the starting points of correct habits and knowledge for the retarded children. The training for correct eye habits helped the children to see phrases and short sentences at one fixation of the eye.

#### IV. CASE STUDIES OF MENTALLY RETARDED CHILDREN

The following case studies of retarded children are included as concrete evidence of the variation which was required to meet individual problems.

##### A. Case Study of Bert

Chronological age, twelve years, eight months.

Mental age, eight years, five months.

I. Q. 66.

Face, pale.

Ears, normal.

Eyes, fair.

Physical health, poor.

School report. Bert was taken from the fifth grade. He had a restless nature. He interfered with the work of others. This seemed to be his way of getting attention. Whenever he showed that he was really interested in his work, he had plenty of energy to get it. He had been discouraged all his life as he expressed it and nothing seemed to interest him.

Our problem was to get an insight into his problem. He was an "introvert". We wished to change his "introvert" nature. I tried to keep his confidence so he could express himself. One day he told me he had been treated unfairly

at home and at school, on the playgrounds and in fact, he said, everywhere and that there just "wasn't any one who cared for him". It pleased him to hear kind remarks directed to him. I tried to say one good thing about his papers or handwork each day.

Bert continued to tell me about his slights, but there was a changed attitude now. He felt that he was at fault, and that he would have to exert himself more than he ever did if he expected to win the approval and praise of others.

He was ready to do his part in gaining recognition for work well done. His school work showed a steady improvement, especially when he was told that he could finish some of his work that he had started during the handwork period the day before, if he did the work assigned in the academic subjects promptly. He was allowed to go to a room in which the janitor gave him enough space to carry on his shopwork. He did this work satisfactorily and liked it.

We were sorry we could not help him more, but he moved away.

#### B. Case Study of Bertha

Chronological age, ten years, nine months.

Mental age, eight years.

I. Q. 74.

Mother's name, Ida.

Face, very good features, and good color.

Ears, fairly good hearing.

Hands, poor muscular co-ordination.

Physical health, good.

School report. Bertha seemed to be in a state of semi-fatigue. This caused her to be restless and fidgety. Her muscles were kept tense. They were never fully exercised and never fully relaxed. She was trying to do 3B work. She could not read the assignments because of her reading disability. Her writing was very poor. She showed no particular interest in anything, and it was difficult to find out what her previous school record had been. She had been in so many schools. The family had moved about a great deal.

When she entered the special class, she felt humiliated to read in a primer with the younger children. One day she said "I know this primer by heart". That was true, but when some of the words were placed in lists on the board, she could not name them. She asked if she might be permitted to color some of the pictures after she had read a few words that we had drilled upon. She found these same words in a work type reader.<sup>1</sup> She was happy to read in this kind of a book. All the books they had at home, she said, were so hard to read. When she was assigned easy supplementary reading, she began to grow intensely interested.

She read in the "Learn to Study Reader", Book One<sup>1</sup> by Horn-McBroom. She also liked to read in "Study Reader"

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<sup>1</sup>  
Ernest Horn, Maude McBroom, The Learn To Study Reader (Chicago: Ginn and Company, 1912), Book I.



<sup>1</sup>  
by Walker-Summy. The importance of providing remedial instruction in very elementary reading (1B work for a girl in 3B) was justified on the ground that since her future progress would be largely determined by her ability to use this fundamental tool throughout the eight grades, time given now to this mastery would be an economy to the school as well as to her. It was profitable for she was able at the end of two months to read in a second reader.

Her specific difficulty in spelling consisted of confusing the letters a and o transposing these in other cases, "fram" for "from", "bran" for "barn". Rapid or inaccurate work may have caused these errors. She was told to spell at a slower rate and to work for accuracy. She tried to be more cautious and even suggested that she would like to make a book to write down all the words she had missed. She studied these words during spare time.

The following method was used to reduce her tense condition. Bertha was told to practice catching a ball. Another child helped her to see that she could measure up to others in the class if she could learn to do things. She muffed the ball many times each day. By constant practice each day, she finally accomplished catching the

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<sup>1</sup>  
Alberta Walker, Ethel Summy, The Study Reader, First Year, (Chicago: Charles E. Merrill Company, 1928).

ball oftener than before. Bertha began to write with less tension of the muscles. She had overcome her restless nature. Taking part in games and other school activities appealed to her now, because she did not attract attention. She was doing her academic work better.

With the help she gained from the pupils in the class to play games correctly and fairly, and with the remedial work in her studies, she was given a better foundation for future work. The family moved out of the city just at the time when Bertha was beginning to adjust herself.

It is true, Bertha was working slowly, but there was a persistence that was admirable. This was the result of continued encouragement from the teacher and appreciation of her efforts by some of her classmates.

#### C. Case Study of L

Chronological age, nine years.

Mental age, seven years, two months.

I. Q. 79.

School report. L could not sit still in school. He was always moving about in the room. The regular teacher said he created disturbances all day long by coughing loudly to attract attention. He simply could not concentrate long enough to get any part of his school work in 3B.

His mother died when he was six years old. The

grandmother said he was peculiar. She said he is "odd about his food", and holds some very fixed religious ideas. In class he spoke about his kind mother quite often. Tears always came to his eyes when he said "she is happy now". He liked to take flowers to her grave.

Traditional procedures were used to enable L to read at least in easy books. Drill and repetition of the difficult words helped L to attack new words. Often L read a page more fluently than the others in his class, but he could not tell what he read. L enjoyed stories in which action made a greater desire for comprehension. He used such work books, as "My Progress Book in Reading",<sup>1</sup> and "Silent Reading Work Book",<sup>2</sup> and "Read and Do", by Stubbings and Watts.

I gave him a primer and other easy books to take home to read to his grandmother. I called at the home and enlisted the grandmother's co-operation. He kept a chart of the books he read at home. When L found some interesting things to do in school, he ceased to try to attract attention by coughing loudly or making other noises. Praise stimulated him to better effort. He continued to improve and tried hard to make adjustments during the time that he spent in the special class room.

<sup>1</sup> Eleanor M. Johnson, My Progress Book in Reading, (New York Looseleaf Education, Inc.).

<sup>2</sup> Laura A. Neprud, Silent Reading Work Book, (Chicago: Scott, Foresman and Company).

#### D. Case Study of W

Chronological age, twelve years, ten months.

Mental age, nine years, six months.

I. Q. 74.

Face, good color.

Ears, normal hearing.

Eyes, good.

School report. W annoyed his teacher and classmates. He had a reading disability and could not do the work in the fifth grade. He wrote so slowly that he was never able to finish his work. When he tried to write faster, he made many mistakes. His reading age was 4B, arithmetic 5B, spelling 4B. In the special class room, the written work was carried on at a slow rate so that there would be no reason for mistakes. He was drilled on lists of words to strengthen his auditory memory. Those words that he missed in spelling class were taken for this drill. Constant review of troublesome words proved an effective help. His failure in spelling was due to transposition of letters. The first thing to do was to have W pronounce the word correctly, for he did not have a definite idea of the sounds. He was started on very easy words to stimulate his interest. Success in getting him to spell words was due to close supervision and praising him for gaining power to put the sounds of the letters in right order. He felt happy when he knew the words so well that he was permitted to help others who had the same trouble he had.

## E. Case Study of X

Chronological age, eleven years, seven months.

Mental age, eight years, eight months.

I. Q. 75.

Physical health, fair.

School report. X was taken from the fifth grade. The regular teacher said he just sat in class, but never took part in the recitations. His educational test showed the following: Reading, age 4B; Arithmetic, age 5B; Spelling, age 4A.

When he was eighteen months old he had meningitis. He had to learn to walk and talk again. His parents were willing to have him enter the special class. In this class he had a chance to recite with boys and girls who were having some of the same difficulties he had. For one thing, he was hard of hearing, but he made a special effort to try to hear what was being said in class. He did not try to do this when he was in the regular grade. It seems he had met with discouragement all his life. He had a special aptitude for art. Design work, painting and pencil work had a strong appeal for him.

X could not take part in the recitations in the regular grade, since the work was clearly above his mental ability. He had been promoted when he was not ready for the next grade.

He wanted to make things, so he was encouraged to make wooden toys. X found directions in a magazine which he wanted to have read to him. I told him it would give

him added power if he would discover how to read this himself. The task was not so pleasant, but X went to work with a will. When he took more interest in his work, he gained in power to read. His spelling chart showed improvement, because now the words had more meaning. An attitude of self-criticism resulted, when he was led to be dissatisfied with superficial work. His eyes demanded something better than to look at slipshod handwork, so he worked painstakingly at anything he had started. He had an incentive to do his very best work, which made the added effort seem worth while.

Here are some of the grades that X made at Technical School: Mathematics, B, C, B, C; English Literature, B; English III, C; English IV, C; General Art, B; Geography, A; History, C; Letters, B; Pen Drawing, C.

X is a satisfactory student.

#### F. Case Study of O

Chronological age, ten years, nine months.

Mental age, eight years, two months.

I. Q. 76.

School report. O disturbed the regular room constantly. She told the children at recess that this was her way of getting attention. This must have been said to her at one time, otherwise one would not suppose that she could have a reason for thinking this. She was not able to do 3A work. Her mother said she weighed one and one-half pounds at birth, and could walk and talk when she

was one year old. She was a tiny baby and very frail until she was about four years old. O could not concentrate. Her mind drifted to unrelated subjects. When she entered the special class, O discovered there were two boys who wanted to attract attention in the same way that she did. She decided she would have everything center around her by pretending to be ill. She manufactured hurts and pains in order to gain sympathy. When she was asked to write two sentences, she complained that her hands and arm hurt. To handle O, I tried to put her out in good humor, but at the same time showed her that I understood her excuses. O found that she could do other things she liked to do, if she settled down to work. She liked to make baskets after her Number lesson was finished. She also hemmed towels and took particular pains in doing these neatly.

The family moved out of the city just when she was beginning to take an interest in her school work.

#### G. Case Study of Howard

Chronological age, twelve years, six months.

Mental age, seven years.

I. Q. 56.

School report. Howard disturbed the whole room because he was not ready to do the work in 3B. He had a habit of batting his eyes, making faces and laughing out loud. He was doubly handicapped, because he had a speech defect. His palate was deformed. He had trouble in

breathing. He was told to breathe and expand his chest but not to raise his shoulders. Howard never remembered this. The following eye exercises were given: He was told to look at one side of the room. Then he looked at the floor and at the other side of the room. Next he looked up toward the ceiling, then down on the floor, without moving his head. These eye exercises helped him.

Howard had another bad habit of mumbling. In order to get him to speak clearly, I asked him to stand far away from the class and try to speak so that every one could hear him. He was very stubborn and kept saying the class would make fun of him if he did this. He did not care for handwork. Whenever he started a piece of work, he either wanted someone to finish it, or he allowed it to remain unfinished.

The second year when he was in the special class, his attitude changed somewhat. He took an interest in writing. Howard often asked me to give him sentences to write. He will always need supervision, and will not become a self-supporting citizen.



## V. CASE STUDIES OF EDUCATIONALLY RETARDED CHILDREN

### A. Case Study of S

Chronological age, seven years, eleven months.

Mental age, seven years, two months.

I. Q. 91.

School report. S was taken from the regular 2B grade. He did not have a foundation for reading in this grade. He did not know words such as "said", "what", "have", "come". He did not observe differences in the structure of words due to lack of close attention and work habits. He annoyed the children by kicking and pushing them, rolling his eyes and giggling. His family had scolded him for bringing home poor grades. His sister made good grades at high school and the parents could not understand why S could not make better grades. His sister was held up as a model, while S was constantly scolded by his parents. He had a feeling of inferiority and compensated for this by trying to attract attention in annoying other children in the class.

S had to start at the very beginning of reading. He did not know the long sounds of a, e, i, o, and u, so he could not make out one syllable words, in which the final "e" makes the vowel have the long sound. After a few weeks of drill on words, I discovered that he had good

auditory imagery, but poor visual imagery. A word that he could not recognize at sight was easily pronounced if he spelled it. He made no attempt at phonic analyses. This made his reading slow and inaccurate. When he was asked to read from a chart, he called it "baby work" and said he had had that in 1B. For several days he refused to read from the chart, saying that he knew those words, and that they were too easy for him. He wanted to read with a more advanced group of children. After I explained to him that he might read with this group if he could answer questions about the reading lesson in the same way in which these children responded, he began to take more interest and asked if he might read from the chart now. There was marked improvement in his reading when he began to take an interest in his work. It was not so difficult to instill work habits now that his interest was aroused. When he was kept busy at tasks that he could do, he was able to maintain attention on a specific thing and ceased annoying the children.

S was returned to the regular grade after being in the special room eight months. He has been promoted each semester, and is doing satisfactory work.

#### B. Case Study of H

Chronological age, ten years, eleven months.

Mental age, nine years, two months.

I. Q. 84.

Face, pale.

Ears, normal.

Physical health, fair.

School report. H started in the kindergarten when he was five years old. He repeated 1B and 1A work. He was not able to do the work in the 2B grade. This boy was very listless. When he was asked to give the words from a Primer, he was unable to do it. The foundation work was lacking. This was due, perhaps, to irregular attendance and moving about from place to place.

To an observer, it seemed as if he did not belong in a special class. One observer said, "Some of the underlying principles in the earlier grades must have been neglected or overlooked, thus retarding him." He was clean and neat in appearance. He was interested in his family and the things about him. As he had had an opportunity to drive his father's automobile, he showed a special interest in machinery. Very much like other lads, he was interested in sports and liked to play with other children. It seems that this boy enjoyed being held responsible for certain things. He liked to be put on his own resources. If he started a piece of handwork, such as basket or rug weaving, he did not want any one else to touch it. If any one bothered him, he became very angry and declared he would not work on it anymore. Under the proper training, I felt that he would develop into a useful, self-supporting citizen.

Remedial work was given in Reading. He was allowed to recite in a number of reading classes, since he was

distinctly a "Reading disability case". It was helpful to follow somewhat the order of some primer because the primer guides the teacher in the selection of words. We used the Bolenius Primer. At first H resented it because he had to read from a Primer. As soon, however, as he had sufficient power to master new words, he was permitted to read from a First Reader. He was not asked to read all of the Primer. This seemed to encourage him and was an incentive to greater effort and interest. He was able to read in a Second Reader in January. If he had been kept in the 2B grade in a regular class, he would have failed and would have missed the opportunity of getting a good foundation for reading. He felt happy whenever he found stories that he could read and enjoy without asking about some of the words.

#### C. Case Study of D

Chronological age, eight years, ten months.

Mental age, seven years, six months.

I. Q. 84.

Physical health, good. His adenoids and tonsils were removed when he was seven years old.

School report. He was not able to do the work in the regular grade, 2B. He annoyed other pupils. His conduct attracted the attention of some of the children and kept them from doing their best work.

D had poor eye co-ordination. This was no doubt due to lack of training and attention. He was not able

to focus his eye. When we played games in which the children must keep their eyes closed for a minute, the children observed that he would not keep his eyes closed two or three seconds. I had him look in one corner of the room without closing his eyes, while I counted three, then five. Gradually I counted to ten and he could look steadily without batting his eyes. Then we tried to have him count to himself to see if he could keep his eyes closed until the class said, "Open your eyes". He counted to twenty but our count was twenty-eight. After practicing for months his eye oscillations ceased to such an extent that his reading disability improved. Reading began to have a real meaning and he said that he wanted to know how to read and "spell". He said that his spelling would help him read better. He made the following remark one day: "Reading and spelling pay because you have to know how to read and spell when you run a store and my Uncle Tom wants me to help him in his store."

The difficulty in connecting the sound, appearance and meaning of a symbol was partly overcome by having D:

1. Cut out letters to impress their form, thus bringing in the associations of the large muscular movements used in cutting.
2. Write the letters, saying them at the same time.
3. Take part in relay races to see who could find a given letter first, when the letters were written on the board in two columns.

His spelling and number disability was due to poor study habits because of the poor eye co-ordination. His memory for oral number work was good.

D did not care for hand work. He was anxious to know how to read well and be returned to his regular grade if possible. His hopes were not realized, however, because of the roaming disposition of his parents. There were tears in his eyes when he expressed the wish that he might be allowed to continue work in this school.

#### D. Case Study of Orville

Chronological age, nine years, one month.

Mental age, nine years.

I. Q. 100.

Physical health, good.

School report. Orville was tested March 6, 1930 when he was a pupil in the 3A grade. The mental activities as shown by the regular teacher:

Attention, poor.

Concentration, poor.

Memory, fair.

He had a cheerful disposition and was obedient. The chief difficulty as seen by the teacher was that he was promoted too rapidly. His greatest fault was his lack of reading ability. He could not take part in the recitations in the 3A grade.

When Orville was placed in the special class, he found other children in this class who had the same

difficulties that he had. The Educational test showed his reading age to be 2B. Orville recited reading lessons with the 2B group of children. His spelling age was 2B and in Numbers, 2A.

Orville looked at pictures in his reader and then guessed at a word. He had never thought of trying to make out new words by analyzing the word into its letters. He called the word "very" "even"; he read "in the yard", "in his yard". Although he found it irksome to analyze each word into its letters, still he showed a determination to want to know words until it was no longer necessary to do this. When Orville's vocabulary was increased, he began to take an interest in reading "to find out", as he expressed it.

He was interested in the following exercise: One child started to read at any point in the story. It gave Orville pleasure to be one of the first to discover the place and then take up the reading. He was soon able to read directions from the board. He liked to draw pictures to illustrate his ideas.

Orville did not always start on his work promptly. I discovered that he did not understand what he was to do. When he had further explanation from me or from some one in the class, he started to get his lesson, and would not allow his attention to be diverted.

He is attending a township school at present. His work is satisfactory and he will be promoted to the 5B grade.

### E. Case Study of Y

Chronological age, ten years, eight months.

Mental age, nine years, two months.

I. Q. 86.

School report. Y was taken from the 3B grade and transferred to the special class. She had a speech defect and seemed to be timid about speaking, or taking any part in the recitation.

When she entered the special class, she felt very humiliated. She cried every day for about three weeks. This did not disturb the class because she did not cry loudly. One day Y told me she would be happy if she did "not have to be" in a class with Howard. He also had a speech defect and worried Y because he talked so much. A personality problem confronted me many times. It is true, that perhaps later in life, Y will have to come in contact with people like Howard. However, I decided to transfer him to another class.

Y began to take an interest in her work. Her attitude towards work changed. I gave her words that were alike in some visual detail, words alike in some phonetic elements, words alike in length, words alike in general configuration and words made of letters in reverse order. This developed in Y the habit of examining words closely and noticing the important parts. She had always looked at a word in a superficial manner and had only a vague impression of it. Time was well spent giving this type of work, for Y developed an eagerness for reading. She was returned to the regular grade.



### F. Case Study of Claude

Chronological age, ten years, two months.

Mental age, eight years, eight months.

I. Q. 85.

Face, good color.

Ears, normal hearing.

Nasal pharyna, enlarged tonsils.

Eyes, good.

Hands, good muscular co-ordination.

Physical health, fair.

School report. Claude started in the kindergarten when he was five years old. He repeated 1B and 1A work twice and 2B work "more than twice" as he expressed it. He had moved so many times, that it was hard to find out about his school work. He was ten years and two months old when he entered the special class room. He told the Psychologist that he could not remember words which he was "supposed to know" because they looked so different each time. Claude's failure to read was due to such disabilities, as lip movement, short eye span, irregularity in school attendance, inattention and inability to recognize words and lack of interest. Claude was given a daily review of his reading. This review was detailed. Flash card drills including words, easy phrases and short sentences were given. We were able to interest him in the Progress Chart. When he noticed that he was gaining power to attack unfamiliar words, he began to take an interest in school work.

Claude was a good worker. He liked to do handwork. I tried to choose, therefore, work that would rouse his interest and at the same time develop muscular control and brain center co-ordination. For example, he made a footstool because he felt a need for it in his home. He told me how high he wanted to have it. He chose the kind of wood he wanted. He selected the proper nails and screws, thus developing judgment. Another value of handwork was that it satisfied his urge of self-expression. Claude next made brushes, toys on standards or platforms and helped with posters. We depended on him for good printing.

He made the following grades at Technical Junior Vocational school after he left the Special school:  
English I, C; English II, B; Civics, B; Mathematics, B, A;  
Forge, B, C, A; Electricity, D; Auto-Machine, B; Ignition, C.

The last we heard he was doing satisfactory work in school.

## VI. SUMMARY AND CONCLUSIONS

### A. The Writer's Aim and Conclusions

The writer has attempted throughout this thesis to point out the methods used in solving the problems of the individuals within the group of retarded children.

From this study the following conclusions may be drawn regarding the effect of providing for the needs of retarded children.

1. Individual Instruction Enabled the Children to Progress at Their Individual Rate. Individual instruction provided opportunity for children to recite with a higher group, when they were ready to do the work in the higher section. Thus, some of the children were able to do 3A work in reading, though capable only of accomplishing the assignment in spelling for the 2B grade.

The writer wishes to make clear that emphasizing individual instruction did not mean that all special class pupils had to be taught singly in all subjects. Children who had the same or similar difficulties were taught in groups in certain subjects. By reciting with a small group of pupils they felt free to discuss things that were of interest to them. The work was placed on a level at which they could succeed, and the result was joy of accomplishment.

2. From the Sample Units and Case Studies It Is Evident:

- a. That the pupils were given instruction in such units as health and safety which functioned at the level on which they are now living and on which they will continue to live through adult life.
- b. That these units together with the emphasis on sense training resulted in increased poise, judgment and muscular co-ordination.
- c. That the principles set forth as underlying method resulted in interest and progress in school.

3. From the Manual Training the Writer Wishes to Point Out the Following Results:

- a. Development of muscular co-ordination and control.
- b. Satisfaction to the urge for self-expression through making something.
- c. Stimulation through co-ordination of academic and handwork.
- d. Development of character traits.
- e. Increased ability in social adjustment, through experience in co-operation, when working in groups toward a common purpose.
- f. Development of imagination, originality and discrimination.

4. Progress Made in Reading, Arithmetic and Spelling.

- a. The following table gives the regular grades in which the pupils were allocated before they were transferred to the special room, the chronological age, the mental age, I. Q. and progress made in the writer's room in reading, arithmetic and spelling. The growth evidenced in the table is typical of that accomplished each year, as measured by the standardized tests. A copy of the test with directions for administering it is to be found in the Appendix, (page 68). From the table it is clear that a large percentage of the pupils made at least a semester's progress in reading within the year. Over half of the pupils advanced to the next semester's work in arithmetic. Some of the pupils made a semester's progress in spelling, and a few made two semester's progress within the year.

TABLE IV  
 PROGRESS MADE IN READING, ARITHMETIC AND SPELLING<sup>1</sup>

Name	Regular Grade	Chronological Age	Mental Age	Reading Age	Arithmetic Age	Spelling Age	I. Q.	Date
Claude	2B	10-2	8-8	1B	1B	1B	85	Nov.
		10-4	8-8	1A	1B	1B	85	Jan.
		10-9	8-10	2B	2B	1A	85	June
Howard	3B	12-6	7-0	2B	2A	2B	56	Nov.
		12-8	7-0	2B	2A	2B	56	Jan.
		13-1	7-3	2A	3B	2B	56	June
Orville	3A	9-1	9-0	2B	2A	2B	100	Nov.
		9-3	9-0	2B	2A	2B	100	Jan.
		9-8	9-1	2A	2A	2B	100	June
Bert	5B	12-8	8-5	3B	4B	4B	66	Nov.
		12-10	8-5	3B	4B	4B	66	Jan.
		13-3	8-7	4A	4B	4B	66	June
Bertha	3B	10-9	8	1B	1B		74	Nov.
		10-11	8	1B	1B		74	Jan.
		11-4	8-2	1A	1A	1A	74	June
D.	2B	8-10	7-6	1B	1B	1B	84	Nov.
		9	7-6	1B	1B	1B	84	Jan.
		9-5	7-7	1A	1A	1A	84	June
H.	2B	10-11	9-2					

<sup>1</sup>

Truman L. Kelley, Giles M. Ruch and Lewis M. Terman,  
New Stanford Achievement Test, (New York: World Book Company,  
 1929).

TABLE IV. (Continued)

L.	3B	9-0	7-2	1B	1A	1B	79	Jan.
		9-5	7-2	1A	2B	1B	79	June
S.	2B	7-7	7	1A	2B	1B	91	May
		7-8	7-1	1A	2B	1B	91	June
		7-11	7-3	1A	2B	1B	91	Sept.
		8-3	7-3	2B	2B	2A	91	June
W.	5B	12-10	9-6	4B	5B	4B	74	Jan.
		13-3	9-7	4B	5A	4B	74	June
O.	3A	10-9	8-2	2B	2A	2B	76	Nov.
		10-11	8-2	2B	2A	2B	76	Jan.
		11-4	8-4	2B	2A	2A	76	June
X.	5B	11-7	8-8	4B	5B	4A	75	Nov.
		11-9	8-8	4B	5B	4A	75	Jan.
		12-2	8-10	4A	5B	4A	75	June
Y.	3B	11-11	8-4	3A	3A	3B	69	Nov.
		12-0	8-4	3A	3A	3B	69	Jan.
		12-6	8-6	3A	3A	3A	69	June
Z.	3B	10-6	8-0	2B	2A	2B	77	Nov.
		10-8	8-0	2B	2A	2B	77	Jan.
		11-1	8-5	3B	3B	3B	77	June
E.	2A	11-6	6-6	1A	1A	1A	59	Jan.
		11-11	7-1	1A	2B	1A	59	June
M.	2A	9-0	6-7	2B	1A	2B	77	Nov.
		9-2	6-7	2A	2B	2B	77	Jan.
		9-7	7-1	2A	2B	2A	77	June

### 5. Advantage of Homogeneous Grouping on Attitude.

When children with a chronological age of ten or eleven years recited together in their small group in a special room, school tasks did not become unbearable if they knew just what to do, and were not forced beyond their capacity. This led to a friendly feeling which made the children want to be in school. Truancy was not a problem in this room.

### 6. Some of the Problems Which Frequently Caused Difficulties Were the Following:

- a. Moving. Many of the children came from homes of transients. Often, therefore, they moved just as they were beginning to make progress in the special room. It resulted also, in making follow-up work by the writer, impossible.
- b. Unsuitable environment. A number of children could have made greater progress if the atmosphere of the home had been better. Lack of co-operation on the part of parents seemed to undo some of the work of the school.
- c. Fixed habits. Children who entered the special class early in their life made greater progress than those who entered later, because it was easier to develop new habits with younger children.



## VII. APPENDIX

### A. Bibliography

- Binet, Alfred and Simon. The Development of Intelligence in Children. Baltimore: Williams and Wilkins, 1916. Pp. 8-40.
- Bridie, Marion F. An Introduction to Special Class Work. New York: Longmans Green Company, 1922. Pp. 1-45.
- Brueckner, Leo J. and Melby, Ernest O. Diagnostic and Remedial Teaching. Chicago: Houghton, Mifflin Company, 1931. P. 598.
- Committee on Special Classes. Special Education. The Handicapped and the Gifted. Washington, D. C., 1931. P. 443.
- Dewey, John. Democracy and Education. New York: MacMillan Company, 1916. P. 434.
- Doring, Jessie. "The Problem of Teaching Backward Children to Read." Ungraded. Vol. X, No. 7, New York, October 1924. Pp. 18-22.
- Fraser, David Kennedy. Education of the Backward Child. London: University of London Press, 1932. Pp. 1-85, 146-180.
- Garrison, S. C. and Garrison, K. C. Psychology of Elementary School Subjects. New York: Johnson Publishing Company, 1929. P. 569.

- Goddard, Henry H. School Training of Defective Children.  
New York: World Book Company, 1915. P. 75.
- Gray, William S. Remedial Cases in Reading. Supplementary  
Educational Monograph. Chicago: University of  
Chicago Press, 1922. P. 208.
- Hall, G. Stanley. Educational Problems. New York:  
Appleton Company, 1911. Pp. 397-493; 603-610.
- Hilldreth, Gertrude H. Psychological Service for School  
Problems. New York: World Book Company, 1930. P. 317.
- Horn, Ernest and McBroom, Maude. The Learn To Study  
Reader. Chicago: Ginn and Company, 1924. P. 212.
- Horn, John Lewis. The Education of Exceptional Children.  
New York: Century Company, 1924. P. 337.
- Innskeep, Annie D. Teaching Dull and Retarded Children.  
New York: MacMillan Company, 1926. P. 445.
- Judd, Charles H. and Buswell, Guy T. Silent Reading: A  
Study of the Various Types. Supplementary Educational  
Monograph. Chicago: University of Chicago Press,  
1922.
- Kelley, Truman L., Ruch, Giles M. and Terman, Lewis M.  
New Stanford Achievement Test. New York: World  
Book Company, 1929.
- Kilpatrick, W. H. Education for a Changing Civilization.  
New York: MacMillan Company, 1926. P. 143.
- Ia Rue, D. W. The Child's Mind and the Common Branches.  
New York: MacMillan Company, 1924. P. 483.
- Ieland, Bernice. Observations and Suggestions on Educational  
Diagnosis and Remedy. Detroit: Detroit Teachers  
College, 1928. P. 31.

- Lord, Arthur B. "Wanted: Teachers for Special Education." Journal of National Educational Association. Vol. XXI, No. 6. Washington, D. C., June 1931. P. 178.
- Monroe, Walter S. Measuring the Results of Teaching. Boston: Houghton, Mifflin and Company, 1922. P. 297.
- Morgan, John J. B. The Psychology of the Unadjusted Child. New York: MacMillan Company, 1924. Pp. 180-212.
- Mossman, Lois Coffey. Principles of Teaching and Learning in the Elementary School. Chicago: Riverside Press, 1929. Pp. 292.
- Naumburg, Margaret. The Child and the World. New York: Harcourt, Brace and Company, 1928. Pp. 11-60; 75-92.
- Norsworthy, Naomi and Whitley, Mary T. The Psychology of Childhood. New York: MacMillan Company, 1925. P. 362.
- Parker, Samuel C. Types of Elementary Teaching and Learning. Boston: Ginn and Company, 1923. P. 585.
- Paulu, Emanuel M. Diagnostic Testing and Remedial Teaching. New York: D. C. Heath and Company, 1924.
- Payne, G. E. "A Scale for Measuring Health Habits." School and Society. Vol. XVII, No. 419. New York, 1923. Pp. 25-27.
- Pearl, Norton H. and Brown, H. E. Health by Stunts. New York: MacMillan Company, 1925. P. 216.
- Sandwick, R. L. "Correlation of Physical Health and Mental Efficiency." Journal of Educational Research. Vol. I, No. 3. New York, 1920. Pp. 199-202.
- Scheidemann, Norma V. The Psychology of Exceptional Children. Boston: Houghton, Mifflin Company, 1931. P. 520.

- Smith, W. H. All the Children of All the People. New York: MacMillan Company, 1912. P. 335.
- Stone, Charles R. Silent and Oral Reading. Boston: Houghton, Mifflin Company, 1922. P. 306.
- Terman, Lewis M. The Stanford Revision of the Binet-Simon Tests. Chicago: Houghton, Mifflin Co., 1916.
- Terman, Lewis M. The Measurement of Intelligence. Boston: Houghton, Mifflin Company, 1919. P. 362.
- Walker, Alberta and Summy, Ethel. The Study Reader. First Year. Chicago: Charles E. Merrill Company, 1928. P. 144.
- Wallin, J. E. W. The Education of Handicapped Children. Chicago: Houghton, Mifflin Company, 1924. P. 369.
- Whipple, Helen Davis. Making Citizens of the Mentally Limited. Bloomington, Illinois: Bloomington Press, 1927. Pp. 1-50; 80-100.
- Woodrow, Herbert. Brightness and Dullness in Children. Chicago: J. B. Lippincott and Company, 1919. P. 310.

# New Stanford Achievement Test

By TRUMAN L. KELLEY, GILES M. RUCH, and LEWIS M. TERMAN

## PRIMARY EXAMINATION: FORM W

FOR GRADES 2-3

Name..... Age..... Grade.....

Boy or girl..... Name of school..... Date.....

No.	TEST	SCORE
1	Paragraph Meaning	
2	Word Meaning	
3	Dictation	
4	Arithmetic Reasoning	
5	Arithmetic Computation	
Av.	Total Score (÷ 5)	

TEST 1 READING PAR.MEAN.	TEST 2 WD.MEAN.	TEST 3 DICTATION	TEST 4 ARITHMETIC REASON.	TEST 5 ARITHMETIC COMP.	TOTAL SCORE ÷ 5	EDUC. AGE	CHRON. AGE	SCHOOL GRADE*
68	.	.	.	.	68	11-4	11-4	5.5
67	.	.	.	.	67	11-3	11-3	5.4
66	.	.	.	.	66	11-2	11-2	5.3
65	.	.	.	.	65	11-1	11-1	5.2
64	.	.	.	.	64	11-0	11-0	5.1
63	.	.	.	.	63	10-11	10-11	5.0
62	.	.	.	.	62	10-10	10-10	4.9
61	.	.	.	.	61	10-9	10-9	4.8
60	.	.	.	.	60	10-8	10-8	4.7
59	.	.	.	.	59	10-7	10-7	4.6
58	.	.	.	.	58	10-6	10-6	4.5
57	.	.	.	.	57	10-5	10-5	4.4
56	.	.	.	.	56	10-4	10-4	4.3
55	.	.	.	.	55	10-3	10-3	4.2
54	.	.	.	.	54	10-2	10-2	4.1
53	.	.	.	.	53	10-1	10-1	4.0
52	.	.	.	.	52	9-11	9-11	3.9
51	.	.	.	.	51	9-10	9-10	3.8
50	.	.	.	.	50	9-9	9-9	3.7
49	.	.	.	.	49	9-8	9-8	3.6
48	.	.	.	.	48	9-7	9-7	3.5
47	.	.	.	.	47	9-6	9-6	3.4
46	.	.	.	.	46	9-5	9-5	3.3
45	.	.	.	.	45	9-4	9-4	3.2
44	.	.	.	.	44	9-3	9-3	3.1
43	.	.	.	.	43	9-2	9-2	3.0
42	.	.	.	.	42	9-1	9-1	2.9
41	.	.	.	.	41	8-11	8-11	2.8
40	.	.	.	.	40	8-10	8-10	2.7
39	.	.	.	.	39	8-9	8-9	2.6
38	.	.	.	.	38	8-8	8-8	2.5
37	.	.	.	.	37	8-7	8-7	2.4
36	.	.	.	.	36	8-6	8-6	2.3
35	.	.	.	.	35	8-5	8-5	2.2
34	.	.	.	.	34	8-4	8-4	2.1
33	.	.	.	.	33	8-3	8-3	2.0
32	.	.	.	.	32	8-2	8-2	1.9
31	.	.	.	.	31	8-1	8-1	1.8
30	.	.	.	.	30	7-11	7-11	1.7
29	.	.	.	.	29	7-10	7-10	1.6
28	.	.	.	.	28	7-9	7-9	1.5
27	.	.	.	.	27	7-8	7-8	1.4
26	.	.	.	.	26	7-7	7-7	1.3
25	.	.	.	.	25	7-6	7-6	1.2
24	.	.	.	.	24	7-5	7-5	1.1
23	.	.	.	.	23	7-4	7-4	1.0
22	.	.	.	.	22	7-3	7-3	0.9
21	.	.	.	.	21	7-2	7-2	0.8
20	.	.	.	.	20	7-1	7-1	0.7
19	.	.	.	.	19	6-11	6-11	0.6
18	.	.	.	.	18	6-10	6-10	0.5
17	.	.	.	.	17	6-9	6-9	0.4
16	.	.	.	.	16	6-8	6-8	0.3
15	.	.	.	.	15	6-7	6-7	0.2
14	.	.	.	.	14	6-6	6-6	0.1
13	.	.	.	.	13	6-5	6-5	0.0
12	.	.	.	.	12	6-4	6-4	0.0
11	.	.	.	.	11	6-3	6-3	0.0
10	.	.	.	.	10	6-2	6-2	0.0

TO THE EXAMINER. Do not administer this test without first reading carefully the Directions for Administering. This page may be torn off and filed as record.

\* Grade defined as in Table 2 of the Directions for Administering. See Guide for Interpreting for explanation of vertical bars.

Published by World Book Company, Yonkers-on-Hudson, New York, and Chicago, Illinois  
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PRINTED IN U.S.A.

**DIRECTIONS:** Write **JUST ONE WORD** on each dotted line.

**SAMPLE:**

Dick and Tom were playing ball in the field. Dick was throwing the ball and..... was trying to catch it.

1 Fanny has a little red hen. Every day the hen goes to her nest and lays an egg for Fanny to eat. Then she makes a funny noise to tell Fanny to come and get the.....

2-3 Anna had never seen a squirrel in her life, although she had always wanted to very much. One day when she was playing under a tree she heard a funny noise over her head. She looked up, and what do you think she saw? Up there in the..... was the very thing she had always wanted to see, a.....

4-5 Jack ran into the playroom and got his top and drum. His mother said, "What are you going to do?" "I am going to..... with the other boys,"..... said.

6-7 When the old hen found a nice worm she would say, "Cluck! Cluck!" and the little chicks would come running to her. The..... that got to her first got the..... for its lunch.

8-9 The king gave a party for his baby daughter. All of the fairies came and brought gifts except one. That one was wicked and said that when the baby was fifteen years old she would fall asleep for a hundred years. It made the..... very sad to think of any harm coming to his.....

10-11 One day when Jane was sweeping she found a dime on the floor under the bed. They could not find out whose dime it was, so her mother gave it to her. Now, every time Jane..... the floor she looks carefully under the bed for another.....

12 Bert raised lettuce, peas, and radishes in his garden. He sold the lettuce and radishes and gave the..... to his mother.

13-14 John's father hurried to his office soon after eating breakfast, but before going he told John to pull all the weeds in the garden and mow the lawn. When he returned that evening, after a hard day's work, he found the..... still growing in the garden and the..... uncut.

15-16 Mary's doll and picture book were quarreling. "Mary loves me better than she loves you," said the doll. "No, she loves me the better," said the picture book. When Mary heard them, she said, "You are both mistaken. I..... one of you as much as the....."

17-18-19 When night came, I went into a cave where I thought I might rest in safety. I closed the narrow entrance of the cave with a rock to keep out the bears which were about. But I could not sleep for thinking of the danger that a..... might be able to push the..... away from the entrance to the.....

20-21-22 Bessie hunted for a fairy everywhere, but finally, quite discouraged, she sat down and rested her tired little head against the big brown root of her favorite tree. It was such a friendly tree that it seemed there ought to be a fairy on every bough. She peeped to see and spied just one teeny-weeny fairy; but, as you know, even one fairy may be pretty nice company; so Bessie climbed the..... and reached out to the..... who walked right up her arm and sang a little song in her ear. Later Bessie told her mother all about it, and Mother said, "I guess you were....."

23-24 Whenever many men dwell together in fellowship, one must be leader and the others must yield him obedience or everything will go wrong. Thus thought the outlaws of Sherwood; so one day they met together and chose Robin Hood as their..... When he had been chosen, they all took a great oath that they would..... his commands.

25-26 In parts of Mexico water carriers are to be seen going to and from the fountain in the plaza with great jars of clay holding many gallons of water. There are no pipes or wells to supply the houses, and all the..... used by the families has to be brought from the.....

Go right on to the next column.

Go right on to the next page

Number right	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Score	3	13	15	17	19	21	23	25	26	28	30	32	34	36	38	40	42	43	45	47	49	50	52	54	55	57	58	59

27-28 Herbert had three balloons, a red one, a blue one, and a yellow one. The red one burst. He gave the yellow one to his sister Ann. .... kept the.....one.

29-30 The smoke from the forest fires hung over the valleys for days, smothering the sun. Lamps had to be lighted at three in the afternoon. Conductors on trains carried lanterns all day to read the tickets of passengers. In short, day was turned into..... It was more than a week before rains came and put out the.....

31-32 A Nevada schoolgirl once wrote, "A river is a dry sandy gulch in which there is sometimes water." This is not a bad description of a Nevada river, for in a desert country like....., river beds are..... during most of the year.

33-34 Sand is rock ground fine. The miles of white sand that cover our beaches by the seashore have been made by the restless waves which in the course of long years have .....the.....into fine particles.

35-36 Introspection means looking inward and retrospection means looking back on things past. Consequently, if someone were telling of his experiences on a camping trip the year before, we would call it.....and not.....

37-38 While our earth has only one moon, there are other planets which are more favored. Some have two or three and Jupiter actually has nine. If there are people living on the planet Jupiter, they must find it rather beautiful having so many.....in the.....to look at.

39 Boys and girls know my name. And mothers and fathers, too. Big folks love me. You do, too. The first letters in the first four sentences of this paragraph spell my name; so write it here:.....

40-41 Bacteria are of inestimable value to man. Many of our agricultural processes are vitally dependent upon their action. If all the .....were destroyed or ceased to act as they do now, our farming industry might be.....

Go right on to the next column.

42-43-44 The eighth-grade children have finished the term's work ahead of time. They do not want to study more arithmetic, except Ralph, who likes it; nor more composition, except Nora, who is writing all the time. Oliver, who wants to become an actor, suggests that the class give a play. As all the children like to see plays, the teacher agrees. It is arranged, therefore, that.....should write the play, that.....should play a leading part, and that.....should keep the accounts.

45-46 The way many English words are spelled is a puzzle and a mystery to the foreigner. When "bite" and "light" sound alike, why are they spelled so differently? A violinist "bows" before drawing his "bow" across the strings. A thousand other examples might be given. It would be simpler if words were..... the way they.....

47-48-49 The burro, a small pack animal, is humorously called the "Rocky Mountain Canary." The mountain country is so rough and the trails are so steep and narrow that many .....are used to carry the packs of the..... Every morning at sunrise they bray long and loud. This explains why they are called.....

50 Some historians believe that the spread of antislavery feeling among the people of the North previous to the Civil War was due less to the moral issue involved than to the fact that they recognized the system of..... as a menace to the industrial system of free labor.

51-52 The Stegomyia mosquito carries the germ of yellow fever but the Anopheles mosquito is the one which spreads malaria. In order to stamp out yellow fever the.....mosquito must be.....

53-54 Distant trees seem bluer than similar trees which are near. If you were to paint a picture, you would mix.....blue in the green for those trees which were near than you would for those which were.....

End of Test 1. Look over your work.

28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
61	62	63	65	66	67	69	70	71	72	73	74	75	77	78	80	81	82	84	85	87	88	90	92	94	95	97

**DIRECTIONS:** Draw a line under the word that makes the sentence true, as shown in the samples.

**SAMPLES:**

A rose is a  
box flower home month river

A roof is found on a  
book person rock house word

1 Ice is made of  
baskets bread plants water wood

2 A castle is a  
clock building path spirit wheel

3 Yesterday was a  
day drive general heart tree

4 A maiden is a  
bird boy girl king plant

5 A nest is a bird's  
egg family food home tree

6 A napkin is made of  
glass iron water cloth wood

7 A hungry person is most in need of  
company food rest sleep water

8 Folk means  
hall office kiss object people

9 Blood comes from  
bodies hair pictures silver wood

10 To be healthy is to be  
different grave well rich sick

11 A thing that is splendid is very  
cold good little thick narrow

12 A brake is part of a  
bag bridge car coat post

13 An umbrella is a  
danger meal native quarrel shelter

14 An onion is a  
pig fruit cook rat vegetable

15 To be content is to be  
lost near plain satisfied sure

16 To exclaim is to  
fight grant hurry listen speak

17 A thing that is evil is  
bad great good long new

18 A map is a  
chart fragment hinge rope vineyard

Go right on to the next column.

19 To labor means to  
add dress order work write

20 Moisture is commercial  
damp everlasting fiery goodly

21 A carol is a  
cargo drug dwarf prophecy song

22 Loyal means distant  
faithful furnish lean sharp

23 To be saucy is to be affectionate  
agreeable devoted dignified rude

24 Foggy means  
clear misty tough uneven varnished

25 A tradesman is a governor  
gypsy leader merchant president

26 A canal is much like a  
box crowd lake prince river

27 To plan is to banish  
bestow design betray defeat

28 To assist is to  
help judge run seek waste

29 I am able means I  
can drink move send tell

30 A glacier is made of  
fish ice rock silk soil

31 To replace is to  
blacken blanch restore thicken toll

32 A defect is a  
deck fault needle limb terror

33 To enlarge means to  
chisel deform expand lisp shorten

34 A sluggard is  
ambitious brave divine earnest lazy

35 Peculiar means  
brief dangerous erect steep odd

36 Gorgeous means frisky gigantic  
hereditary magnificent malicious

37 Flaxen-haired means adjacent  
blond filial impartial maternal

38 To accomplish means to  
begin do enjoy enter forget

39 A villain is a  
jungle leper minstrel scoundrel din

End of Test 2. Look over your work.

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



<i>Sum</i>	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
<i>Score</i>	46	47	49	51	53	55	57	58	59	60	61	62	63	64	65	66	67	68	69	71	72	73	74	75	76	77	78	79	80	81

**DIRECTIONS:** Find all the answers as quickly as you can. Write the answers on the dotted lines. Use the margins to figure on.

1 How many are 5 birds and 4 birds?

Answer.....

2 Jack had 15 marbles and Bill gave him 6 more. How many did he then have?

Answer.....

3 There are 9 birds in one flock and 8 in another. How many are there in both flocks together?

Answer.....

4 Martha has 7 cents, Maude has 8 cents, and Sarah has 6 cents. How many cents have they together?

Answer.....

5 Tom had \$17, but Jane had only \$8. How many more dollars had Tom than Jane?

Answer.....

6 Oranges cost 5 cents each. At that rate, what will a half dozen cost?

Answer.....

7 One day Ruth promised to pick 15 quarts of berries for her mother. By noon she had picked 8 quarts. How many quarts must she pick in the afternoon?

Answer.....

8 Tom's mother gave him 75 cents for groceries. He received 13 cents in change. How much did the groceries cost?

Answer.....

9 At 10 o'clock, Mae went to her friend's home with permission to stay five hours. At what time should she come home?

Answer.....

10 Bert had 10 cents to spend for marbles. He paid 2 cents for one and 3 cents for another. How many marbles at 1 cent each could he buy with the remainder?

Answer.....

Go right on to the next column.

11 Martha has saved \$3.75. How many dollars more does she need to buy a coat which costs \$45.75?

Answer.....

12 At a sale, five-cent candy bars were sold at the rate of 3 for a dime. How many should Maude get for 30 cents?

Answer.....

13 A plasterer worked 7 hours a day for 5 days. How much did he receive for his work if he charged \$2 an hour?

Answer.....

14 Kate pulled 48 radishes from her garden to sell. She put them into bunches of 12 radishes each. At 5 cents a bunch, how much should she get?

Answer.....

15 The scale on an automobile road-map shows that 1 inch represents 20 miles. How far apart are two towns that are  $2\frac{1}{2}$  inches apart on the map?

Answer.....

16 Mr. Brown sold 11 calves for \$209. What was the average price per calf?

Answer.....

17 Ellen used 24 inches of ribbon in trimming a Christmas wreath. What part of a yard did she use?

Answer.....

18 The trail to camp is  $6\frac{1}{4}$  miles long. How far are some boys from camp who have traveled  $4\frac{3}{4}$  miles along the trail toward camp?

Answer.....

19 Candy was sold in  $\frac{1}{4}$  pound bags for 20 cents each. At the same rate what would a pound and a half cost?

Answer.....

20 Harry worked from 9 o'clock in the morning until 5 o'clock in the afternoon except for a half hour at lunch time. How much should he receive, if he charged 30 cents an hour?

Answer.....

End of Test 4. Look over your work.

Number right	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Score	3	10	16	22	30	37	43	50	58	61	65	68	71	75	78	81	83	85	87	89	91

**DIRECTIONS:** Get the answers to these examples as quickly as you can without making mistakes. Look carefully at each example to see what you are to do.

Begin here.

(1)  
 $5 + 3 =$

(2)  
Add  
 $\begin{array}{r} 0 \\ 4 \\ \hline \end{array}$

(3)  
Add  
 $\begin{array}{r} 4 \\ 6 \\ 5 \\ 3 \\ \hline \end{array}$

(4)  
Subtract  
 $\begin{array}{r} 5 \\ 2 \\ \hline \end{array}$

(5)  
Subtract  
 $\begin{array}{r} 7 \\ 7 \\ \hline \end{array}$

(6)  
Subtract  
 $\begin{array}{r} 17 \\ 3 \\ \hline \end{array}$

(7)  
Subtract  
 $\begin{array}{r} 12 \\ 4 \\ \hline \end{array}$

(8)  
Add  
 $\begin{array}{r} 24 \\ 7 \\ \hline \end{array}$

(9)  
Subtract  
 $\begin{array}{r} 89 \\ 76 \\ \hline \end{array}$

(10)  
 $4 \times 8 =$

(11)  
 $2 \overline{)6}$

(12)  
Subtract  
 $\begin{array}{r} 895 \\ 437 \\ \hline \end{array}$

(13)  
Add  
 $\begin{array}{r} 876542 \\ 754290 \\ 389364 \\ \hline \end{array}$

(14)  
 $6 \times 7 =$

(15)  
Multiply  
 $\begin{array}{r} 452 \\ 4 \\ \hline \end{array}$

(16)  
 $7 \overline{)56}$

(17)  
 $8 \div 4 =$

(18)  
 $9 \overline{)77}$

(19)  
Subtract  
 $\begin{array}{r} 1000 \\ 425 \\ \hline \end{array}$

(20)  
Subtract  
 $\begin{array}{r} 3\frac{3}{5} \\ 1\frac{1}{5} \\ \hline \end{array}$

(21)  
 $3 \overline{)14.1}$

(22)  
 $\frac{3}{5} \times \frac{1}{2} =$

(23)  
Subtract  
 $\begin{array}{r} 52\frac{1}{4} \\ 27\frac{1}{8} \\ \hline \end{array}$

(24)  
Add  
 $\begin{array}{r} 35\frac{1}{5} \\ 24\frac{1}{3} \\ \hline \end{array}$

(25)  
 $37 \overline{)85359}$

End of Test 5. Look over your work.

Number right	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Score	3	7	11	18	23	28	31	33	36	38	40	43	46	49	52	55	57	59	60	61	63	64	65	67	69	71