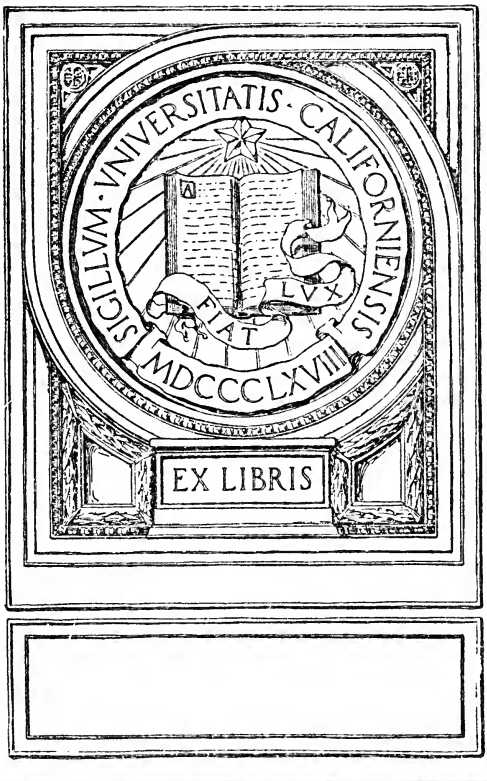
THE LINCOLN SCHOOL
of TEACHERS COLLEGE

A DESCRIPTIVE BOOKLET

PUBLISHED BY
THE LINCOLN SCHOOL *of* TEACHERS COLLEGE
425 WEST 123RD STREET NEW YORK CITY
1922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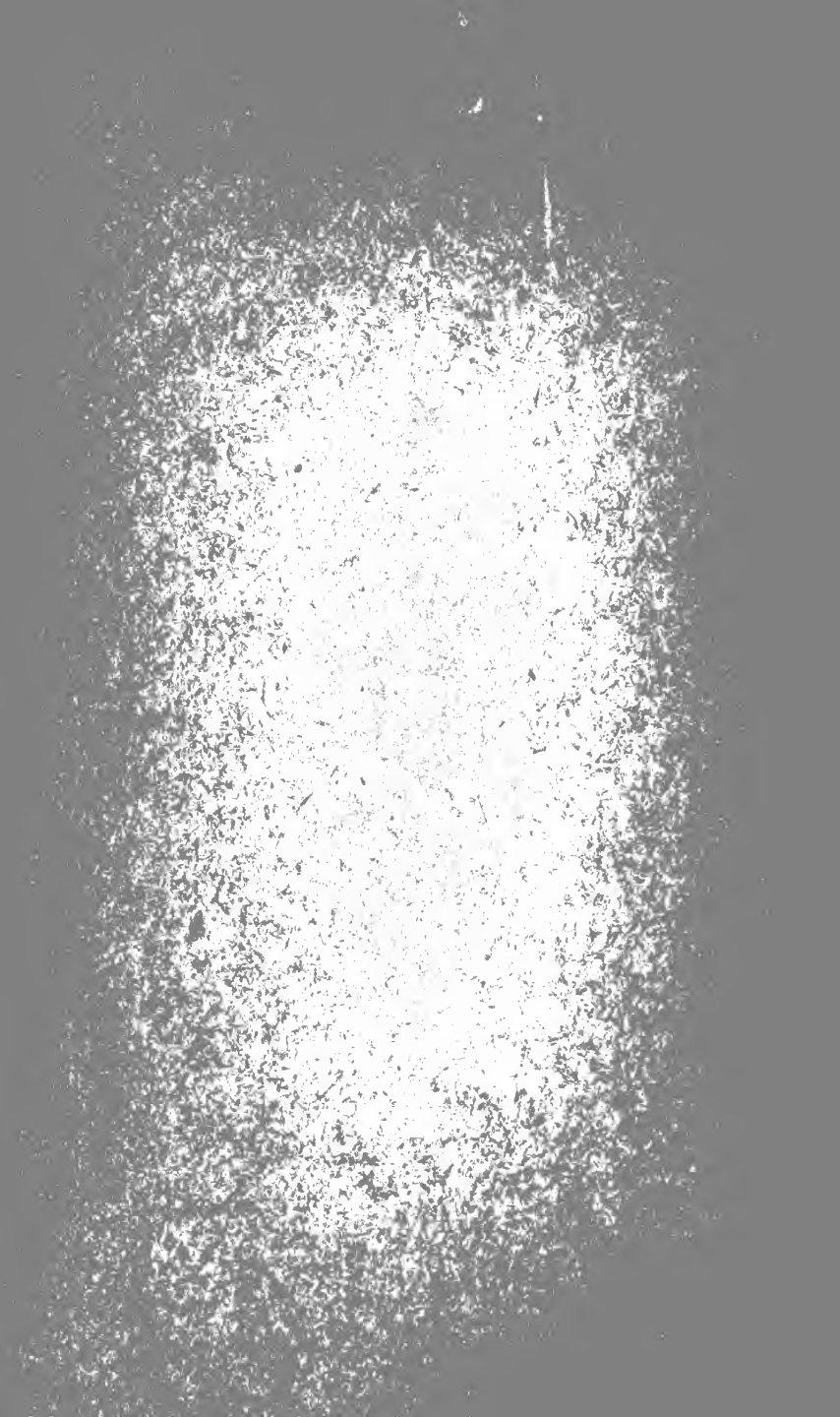

THE LINCOLN SCHOOL BUILDING

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TABLE OF CONTENTS

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I. PREFACE

This pamphlet presents general information regarding the purposes and procedures of the school. Each subject or activity is separately presented, thus making some unavoidable repetition in the statement of aims, principles and methods. The booklet is designed for parents who are considering placing children in the school, and for people engaged in educational work who desire an outline view of the school as a whole. Special publications have been written and others will be prepared giving a much more detailed account of main aspects of the school's work than can be included in this pamphlet. A list of pamphlet publications now available, and information regarding other special publications which are to appear may be obtained by addressing the director of the school.

II. THE STAFF

The staff as here given is the list appointed for the school year 1921–22. Following the administrative officers the names appear in alphabetical order. Changes in the staff for 1922–23 are indicated below.

RUSSELL, JAMES E.	Dean of Teachers College
CALDWELL, OTIS W.	Director of the Lincoln School, and Director of the Division of School Experimentation of the Institute of Educational Research
SCHORLING, RALEIGH	Principal of the High School Division and Teacher of Mathematics
COFFIN, REBECCA	Principal of the Elementary School Division
*MORGAN, LELAND B.	Secretary
ANTHONY, CORA A.	Manager of the Lunchroom
BARNES, EMMA A.	Sixth Grade
BENNETT, VIRGINIA C.	Physical Education
*BRADISH, ETHELWYN C.	Fine Arts
BULLARD, BERTHE S.	French
CLARK, JOHN R.	Mathematics
COLEMAN, MRS. SATIS N.	Music
COLLOTON, CECILE	Assistant Educational Psychologist
CURTIS, NELL C.	Third Grade
*DEWEY, EVELYN	Collaborator in Publications
EATON, ANNE T.	Librarian
FALES, ROY G.	Industrial Arts in the High School

*Resigned

FINLEY, CHARLES W.	Biology and General Science
*GATES, FANNY C.	Physics, and Chairman of Social Activities
GLENN, EARL R.	Physical Science and General Science
GUCKER, COLBA F.	Physical Education
HARRISON, GAIL	First Grade
HERR, LOUIS A.	Industrial Arts in the Elementary School
HOLZ, MARGARET	Spanish and German
KEELOR, KATHERINE L.	Second Grade
KINNEY, CHARLES M.	Music
KNOWLTON, DANIEL C.	History and Civics
MASON, HOWARD H.	School Physician
MEARNS, HUGHES	Composition and Literature
MELLEN, EVELYN	Music—(violin)—part time
*MERAS, ALBERT S.	French—part time, Chairman of Modern Language Group
MINER, PAULINE H.	Assistant in the First and Second Grades
OLIPHANT, MARY C.	Assistant in the Library
O'NEILL, ALICE	Fourth Grade
QUINCHE, OTHON	French
RIDDICK, ALICE	Fine Arts
RUGG, HAROLD O.	Educational Psychologist
*SAENZ, MOISES	Spanish
SANFORD, VERA	Special Teacher in the High School
SCHWEPPE, EMMA	Special Teacher of Social Studies
SMITH, HELEN G.	Assistant in After School Clubs
TROWBRIDGE, HARRISON	Assistant in After School Clubs
WHITMAN, ARTHUR D.	Composition and Literature
WINCHELL, FLORENCE	Household Arts
ZIRBES, LAURA	Special Investigator in Reading

*Resigned

NEW APPOINTMENTS FOR 1922–1923

COX, PHILIP W. L.	Principal of the High School Division
EVERETT, MARION	Assistant in Upper Grades
KUDERNA, J. C.	Physics, part time
RUGG, EARL U.	Assistant in Research
TIPPETT, JAMES S.	Fourth Grade
VIGGIANI, LOUISA	Assistant in French
YOUNGHANS, ALICE	Assistant in Physical Education

III. PURPOSE

There is a widespread conviction that education can be improved through the use of critical and experimental methods. The ordinary curriculum, though it already contains a considerable amount of new material derived from modern activities, still retains much that is of doubtful value. Moreover, even under relatively favorable conditions, pupils do not satisfactorily master this material, old or new. Several problems are thus presented: first, how much of the traditional material has actual educational value in modern schools; second, what new materials should be introduced into the schools and how can they be prepared for school use; and, third, how can teaching methods be made more efficient and more economical? Many teachers in various parts of the country are trying to solve these problems, but they are for the most part simultaneously carrying a heavy teaching or administrative routine, so that they are not free to devote themselves to new educational tasks. They lack the time; they lack the strength; the burden of their daily tasks hampers original effort. In the hope, therefore, that a school created for the purpose of attacking such problems may contribute to progressive educational movements, the Lincoln School was established.

In the Lincoln School, the curriculum, since it is in process of development, changes from year to year; but the purpose remains constant. The aim is to construct a fundamental curriculum which will be representative of the important activities, interests, and possibilities of modern life. It is hoped that a balanced combination can be obtained which will include æsthetic, linguistic, social, industrial, and scientific elements. This is

obviously a selective task. The curriculum cannot be comprehensive in the sense of containing everything that is important; it can at best select those fundamental and characteristic activities which are valuable in themselves and which are likely to encourage the pupil's further development. From the great range of things worth while the Lincoln School is thus trying to choose those which promise to be most effective in developing the pupil's abilities and in bringing him intelligently into touch with the world in which he lives. It does not follow that a curriculum of this type when constructed will necessarily be best for all pupils; but experience with the conventional types of curriculums indicates that a curriculum more closely related to normal interests and to society's current activities may effectively serve the needs of large numbers of children.

Although the school is frankly experimental in spirit, purpose, and method, it adopts as its starting point the best types of approved contemporary practice. In developing from this point, every precaution is taken, through the use of standard tests and measures, to secure the best education for each pupil.

Besides subject-matter, two other features deserve emphasis. First, the conditions under which American children grow up make it very important that they should cultivate self-control and self-direction. In the hope, therefore, that an effective democratic discipline may be established, every pupil is given opportunities to exercise initiative, and at the same time is led to bear the accompanying responsibility. Second, American life is not only individualistic, but coöperative. Every member of a community must know how to express himself and to take care of himself, but he must also know how to coördinate his own efforts with those of his fellows. In school, therefore, the pupil must be made aware of the needs and responsibilities, not only of himself as an individual, but also of the student body of which he is a member. To this end coöperative efforts of various kinds have been encouraged;

assembly exercises largely conducted by the pupils have been instituted; boy scouts and girl scouts are given recognized places in the school activities; a school bank, a school council, a school employment committee, and a school orchestra have been organized, and school publications are issued.

The school is, therefore, something more than a curriculum made up of modern studies taught in a modern spirit; it is a society of which the pupils are responsible members. The goal is the physical, intellectual, moral, and social training of each pupil.

IV. ORGANIZATION

The Lincoln School began with a small enrollment and will not be allowed to become larger than is necessary for experimental purposes. During the first year, 1917–1918, 116 pupils were enrolled. In 1918–1919 the enrollment was 184, in 1919–1920, 208, in 1920–1921, 215, in 1921–1922, 240, and in 1922–1923 it will have approximately 320 pupils. Pupils come from homes varying widely in social and vocational status. Intellectual tests are not given in the selection of pupils, but standard educational tests are later given to all pupils and are used as a basis of classification and comparison.

At present the school is organized in three divisions:

(a) The elementary school, grades 1 to 6, consisting of pupils approximately six to twelve years of age.

(b) The junior high school, grades 7 to 9, consisting of pupils approximately twelve to fifteen years of age.

(c) The senior high school, grades 10 to 12, consisting of pupils approximately fifteen to eighteen years of age.

Pupils are grouped in classes on the basis of their abilities and attainments. Within each class provision is made for individual promotion according to individual needs. Effort will be made to ascertain whether the number of years now required for preparation for college or for the completion of elementary and secondary education cannot be reduced and whether greater achievement cannot be attained during the years now devoted to elementary and secondary school work. It is believed that the more competent pupils may either complete their high school work earlier than is usual, or may enter college with advanced

credits. Enough has already been accomplished to lead the authorities of the school to hope that in the near future the number of years required in elementary and high school may be reduced for almost all pupils.

V. THE ELEMENTARY SCHOOL

It is now generally agreed that human beings of all ages learn more readily and retain better the things that they feel a need for knowing. In the elementary school, therefore, where a major problem is to teach children to read, write, and use numbers, every effort is made so to arrange the pupil's work in the classroom that he will feel the need of knowing how to read, write, and use numbers, in order to accomplish purposes that he recognizes as worth while.

From the beginning of the first grade the children are given opportunities to do many things which they feel are worth doing; they paint, model in clay, and do carpentry; they cook, sew, and weave. By means of a bulletin board containing notices and comments concerning the class, a collection of attractive books, and a discussion of the value of knowing how to read, a desire to read is cultivated, until gradually pupils are led into reading books for themselves, with a motive that sets them willingly to the performance of the hard work that is necessary to the accomplishment of the task.

By means of visits to docks, railroad stations, warehouses, and markets, pupils learn about the surroundings in which they live. They come back to the schoolroom eager to re-live in work and play the knowledge they have acquired. They paint or draw or construct in miniature the trains they have seen; they set up miniature warehouses and stations; they even build a miniature city, and supply its needs with a toy delivery wagon. With the guidance of the teacher they dictate the story of their trip. The report is mimeographed and added to their record

books. Learning to read and to talk effectively is thus a recognized necessity.

As they continue to do many things which have a social value, children soon discover that things still more worth while can be accomplished by a group including all those who are trying to attain one result. They begin to work together. In one class, for example, several children were working individually at modeling clay animals; the teacher read them the story of Mowgli's brothers; their individual work very naturally grew into a plan to make all the animals in that story and to give a puppet play. Each one of the group was given an assignment to prepare a part of the material necessary for the play, and coöperation was thus practiced.

Children take great interest in boats and trains, and the subject of transportation is a fruitful field for study. Visits such as have been mentioned provided much material which the pupils coöperated in collecting and discussing, orally and in writing. Individual study also grew out of these visits. One boy, for example, wished to learn more about Robert Fulton; one tried to make a dugout; another was provided with reading matter that enabled him to find out how paddle-wheels succeeded oars, and how screw-propellers succeeded paddle-wheels. Having secured the results they aimed at, they reported to the class, thereby putting themselves under the necessity of using effective speech and writing.

The pupils of the third grade are capable of conducting certain business operations needed by the class. This involves much purposeful use of arithmetic, as well as of reading and writing. Here, again, they are making these fundamental processes serve them as means of securing results that are worth while to them.

In the first three grades what the pupils do is largely determined by the classroom teacher, aided by special teachers fitted to direct special kinds of work. In the fourth, fifth, and sixth

grades the pupils can better understand that ability to read, for example, is an accomplishment to be valued for purposes somewhat more remote than the immediate ones just discussed. Hence, in these grades a more exacting study is made of reading, spelling, arithmetic, and penmanship.

Two features of the methods used in the elementary school may therefore be emphasized. First, the children are encouraged to learn how to read, write, and use numbers as means of carrying out aims which are to them significant. Second, they are led to discover that several persons, working together harmoniously, can accomplish greater and more satisfactory results than they can accomplish as individuals working separately. The tendency of every pupil to do things and to be pleased with worthy results of his actions is fostered; and the ability, so necessary in a democratic country, to coöperate with others in obtaining a desired result, is cultivated.

The following outline is representative of the work carried on in the third and fourth grades:

THIRD GRADE—TIME SCHEDULE

9:00	9:10	Consideration of self-planned home work or planning day's program.
9:10	9:45	Working out those schoolroom situations which particularly demand number for their solution, including any necessary drill on arithmetical number facts and principles. (Four days per week. Other subject matter one day.)
9:45	10:00	French.
10:00	10:45	Subject matter, including history, geography, science, composition and spelling as group or individual interests or needs determine. Some of the silent reading may contribute to history, geography, etc. This work deals with different subjects on different days.
10:45	11:00	Physical education.
11:00	11:15	Morning Lunch. (During the light lunch period individuals or small groups contribute to the class through oral reading or other oral expression, dramatization, etc.)
11:15	11:45	Silent reading or literature.
11:45	12:30	Individual or small-group work directed by teachers of industrial or fine arts, or science.
12:30	1:00	Music or literature.

FOURTH GRADE PROGRAM

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9:00	Arithmetic	Arithmetic	9:00–9:15 Special Work	Arithmetic	
9:15	Reading		45 minute Assembly	Reading	
9:45	Social Studies				
10:30	French				
10:50	Penmanship				
11:00	Gymnasium				
11:30	Morning Lunch and Individual Reports				
11:40	Spelling				
11:55	Oral and Written Language				4th Grade Council
12:20	Science	or	Music		
12:50	Lunch and Recreation				
2:00–3:00	Fine Arts	Individual or group work	Household or Industrial Arts	Fine Arts	House-hold or Indus-trial Arts

VI. THE HIGH SCHOOL

A. The Junior High School

The junior high school, as a separate unit, has been established in the hope that it may provide a more purposeful and better unified education for pupils from twelve to fifteen years; so that they may face the responsibilities of citizenship with a more intelligent understanding of the conditions under which they must live and work; so that they may discover to what kind of occupation their capacities and interests are adapted; and, finally, so that a larger number of pupils may be led to continue their attendance at school beyond the age mentioned. To accomplish these ends the conventional curriculum of the seventh, eighth, and ninth grades has been reorganized so as to provide each pupil with a broad range of experiences, activities, and information, closely related to the normal life of a boy or girl of twelve to fourteen years of age.

The following schedule shows that a number of subjects not commonly taught in the seventh, eighth, and ninth grades have been introduced into the junior high school schedule. This has been accomplished by increasing the length of the school day, by lengthening the recitation period, by introducing, through supervised study, a greater variety of work into the single recitation period, and by reducing in some subjects the number of periods per week.

The numbers in the following table refer to periods, not hours, a period being fifty minutes net time in the classroom, laboratory, or playground.

Junior High School Schedule

Hours Weekly

Grade	English	German, French, or Spanish	Mathematics	Science	Physical Education	Music	Industrial Arts*—Boys	Household Arts—Girls	Art	History and Civics
VII	3	2½	3	3	5	2	4	3	3	3
VIII	3	2½	3	3	5	2	4	3	3	3
IX	3	2½	3	4	5	2	3	3	2	4

*Mechanical Drawing is required in grades 7 and 8

B. The Senior High School

The senior high school, grades ten, eleven, and twelve, in its present form differs materially from the form it will probably take within a few years, because the pupils now in these three grades have not passed through all the primary and elementary grades of the Lincoln School. Within a few years, however, the senior high school will be made up of pupils who have for several consecutive years followed the kind of education described above. These pupils should, if their previous work has been successful, be able to do more mature and more substantial work in science, literature, language, mathematics, and history than is now commonly accomplished in secondary schools. They should, moreover, possess more highly developed powers of initiative, they should be more fully aware of their appropriate individual goals, and it is not unreasonable to hope that eventually graduates of the school should be ready for college and professional work earlier than students who pursue the conventional course.

VII. MEASUREMENTS

In an experimental school it is essential that both teachers and administrators should have accurate knowledge of the traits, abilities, and achievements of the individual pupils. The school has established a department of educational psychology charged with the responsibility of keeping such objective records. Four types of work are carried on by the department: First, measurement of the general mental abilities of the pupils; second, measurement of their educational attainments; third, tabulation of pupils' ages, economic and social backgrounds, etc.; fourth, supervision of grading of pupils. From these several standpoints the school is developing a comprehensive set of records regarding its pupils.

The intelligence of each pupil is measured by means of the Stanford-Binet individual intelligence examination, and by means of the Otis, the National, the Terman, the Chicago, the Pressey, the Kingsbury, and the Illinois group intelligence examinations. These two sets of measures of intelligence are recorded, graphically charted, and duplicated. They serve to acquaint administrators and teachers (and parents in personal conferences) with the intellectual abilities of pupils, and they assist in explaining and correcting irregularities in pupils' work.

The charts resulting from measurements of this kind show, first, the chronological ages of the pupils; second, the pedagogical or school ages; third, the mental ages; and fourth, the "vocabulary" age. They indicate, for example, that the school is closely comparable with typical public schools in chronological age; that in pedagogical age Lincoln School pupils show

3 per cent. retardation, while public schools in general show 35 per cent. Similarly, the charts of mental and "vocabulary" age reveal the extent to which pupils are typical, so that in preparing duplicate classes for controlled experimentation in the future such classes can be made closely comparable in mental ability and development.

Measurement of intelligence is accompanied by measurement of educational attainments. Standardized tests are given throughout the school at the end of each semester. New pupils are tested early in the year. Special tests in reading, spelling, social studies, mathematics, etc., are given at various times. The results of the tests are recorded and charted in the same graphic way as in the case of mental abilities. Each teacher has access to a copy of the tables and graphs which acquaint her definitely with the standing of each pupil on each test.

The tests which are used may be illustrated by the following examples. Ability in reading is tested by the Courtis, the Thorndike, the Burgess, and the Monroe tests; in arithmetic (in formal skill) by the Courtis test, the Cleveland test, the Buckingham Verbal Problem Test, and the Illinois Examination. In spelling, sentence tests are compiled from the Iowa-Ashbaugh scale.

Inasmuch as intellectual ability is only one phase of the pupil's equipment, ratings of each pupil are made by his parents and his teacher, in respect to the dynamic qualities, such as initiative, industry, resourcefulness, leadership, coöperativeness, various personal qualities, etc.

The activities above described are primarily meant to contribute to the effectiveness of the school. They serve to safeguard the child against harmful experimentation, but the facts elicited and the records built up should also in time furnish data upon which definite educational conclusions can be based, for, as is well known, hitherto educational innovations

have been proposed and tried but have rarely been closely followed up. The records of the school should, for example, throw light upon such questions as the validity and the constancy of the intelligence quotient and the reliability of the various achievement tests now so commonly used.

VIII. READING

As has been pointed out in the section on the elementary school pupils learn more readily the things that they wish to know. If the ability to read, therefore, is recognized as a means of accomplishing an aim that is desired, the process of learning becomes more effective. This is the principle underlying early instruction in reading at the Lincoln School. The material used is selected because it has a relation to the child's interests and previous experiences. The spontaneous dramatization of stories, after they have been read, and the use of pictures illustrating the things read, make the early impressions vivid and engaging, so that the process of learning to read is carried on with enjoyment. The children's curiosity and desire to be able to understand what the printed page contains are stimulated by the devices mentioned in the description of work in the first grade; when they are able to recognize a few words, they begin to read stories in which these words occur repeatedly.

A series of games in which drill in the recognition of words already learned plays a large part, and in which also new words are met and learned, is used to carry on the process. This plan is devoid of the elements that so often cultivate in the child a dislike for the severe effort that is sometimes required. As soon as a child reaches a certain standard of ability, he is allowed to select books for further reading from the school library. Thereafter the school librarian coöperates with the teacher in fostering the desire to read and in guiding individual taste. Pupils' book-notes are filed in the library for reference. The frequent occasions when pupils need to consult books are used to encourage good habits of study and to teach the use of ref-

erence materials. Standard tests are given at stated intervals, and pupils with low reading scores receive special attention.

There is general agreement as to the need of a reconstructed reading curriculum, and this is one of the subjects now under investigation. It is necessary to make an analysis of present practice and of proposed methods, based on the collection of data from a large number of schools. Meantime, the best available methods are being used and carefully modified in such ways as to secure the most rapid advancement in reading.

IX. ENGLISH

From the first grade to the twelfth the aim of the English course is to teach children to read intelligently and to write and speak in accordance with the accepted standards. It is, however, important that these habits as formed should be accompanied by increased pleasure in reading and by increase in enjoyment of effective writing and speech. We must, therefore, avoid the mistake of treating children like mature persons; the ultimate aim is maturity, but at any given stage of the pupils' development the habits appropriate to that stage must be respected; normal tastes and desires must be used as the means of improving tastes and refining desires. Fundamental mechanical skills—spelling, punctuation, grammar—must of course be taught.

In the elementary school the entire day affords opportunity for oral expression. Discussion, questions, criticism by the teacher, the relating of experiences, council meetings, and assemblies provide frequent occasion for effective speech under varying conditions. Correspondence with former classmates, the composition of short plays, and written reports on experiments and investigations call for various kinds of writing. The motive is always to enable someone else to share understanding or enjoyment. In the upper grades certain class periods are given wholly to English, but satisfactory results cannot be secured except through attention to clearness and correctness of expression in all classes.

The problem of spelling has been attacked by a committee composed of the teachers of the third, fourth, fifth, and sixth

grades, and the teachers of English in the high school. Using the Horn-Ashbaugh list, which is made up of several hundred words for each grade, these teachers first dictated to each grade, from the third to the eighth, the list of words for that grade. The same lists were then dictated again, and each pupil made a list of the words he had misspelled. His spelling assignment for the year was then to master the words in his list. If his list was short, he was enabled to use the time saved in doing other work. After completing the six lists now included in this spelling course, the pupil should be able to spell correctly the four thousand words commonly used in correspondence—an accomplishment of no mean order.

In order to insure mastery of misspelled words, careful instruction is given in the method of learning to spell. The permanent mastery of the words studied is as far as possible insured by a series of reviews so planned that they occur at gradually increasing intervals until the word has been retained for a sufficient length of time to justify the conclusion that it is completely learned. During the spelling period the pupils work in pairs, dictating these reviews to each other, each being responsible for the correction of his partner's work, as well as for the completion of his own. The fact that the pupil keeps his own record and follows his own progress is a great incentive to thorough study.

Although the plan has been in operation too short a time to permit the presentation of any final conclusions, certain good results have already appeared. In the first place, interest is stimulated by directing pupils' efforts toward the mastery of their own known misspellings. Besides this, the record sheets enable teachers to pick out the pupils who have not been studying properly, and those who have special difficulties in spelling and whose weaknesses need individual attention. It is, of course, necessary to supplement the list of four thousand most commonly used words by recording and studying all the mis-

spellings that occur in the ordinary writing done by pupils in their daily work.

In the high school, since English is a distinct subject, with its own definite period, the relation between English expression and other studies must be maintained by planned coöperation between the English teacher and the teachers of other subjects. At present it seems that such coöperation is best promoted by enabling the teacher of English to spend some time every week in attending the recitations of his class in other subjects, and making the results of his observations the subject of study and instruction during the English periods.

The outstanding aim of the teaching of composition in the junior high school is the mastery of the fundamental mechanics of written expression. In view of the notorious lack of such mastery even among college students, this may appear an overambitious aim, but it is probably, to a very great extent, within reach. Through lists of errors made by pupils in their written work, it is possible to put instruction on an individual basis, and to set up minimum requirements that will secure a more economical use of the time allotted to English in the seventh, eighth, and ninth grades. By the end of the ninth year pupils should be able to write clearly on matters about which they are informed and in which they are interested.

We have pointed out the necessity of using immature taste as a means of arriving at mature taste. If the study of literature in the high school is to result in the enjoyment of good reading, the books read must be carefully graded, so that the standard will be always rising, but never too high. To secure such a graded list of readings involves selection from a large amount of material, through observation of the way successive classes of pupils react to it. Selection of material is now going on, by means of oral and written book reports, in which pupils are encouraged to give sincere opinions, under no fear of penalty for failure to agree with the judgment of adult critics or with tradi-

tion. Written reports of this nature are filed in the library, and through their use it should eventually be possible to distribute books by grades in accordance with the developing tastes of growing children. The habit of independent thinking, gives a real value to this collection of book reports.

In every school the last-minute rush to finish assigned reading or to "bring in" an essay is well known. This hasty, insufficient reading and writing can be checked if the reading and writing are done under the supervision of the teacher. Interest that begins under such conditions carries over self-imposed tasks. Class work of this nature does not preclude assignments for home study in the ordinary sense, but it assures the cultivation of a proper method of work.

The pupils publish a small magazine known as "Lincoln Lore," which provides a motive for the most careful work by contributors throughout the school. The quality of its contents is due to a standard set by the student editors, with the guidance, but not under the dictation of the teacher adviser. Other influences that operate to the same end are frequent assemblies, dramatizations, and the exchange of letters with pupils of other schools. The pupils of the eighth grade, for example, are carrying on correspondence with a group of young students in Japan: those of the seventh grade have recently begun to correspond with the pupils of a junior high school in California. Through varied activities children are reaching higher standards of appreciation and expression.

X. FOREIGN LANGUAGES

The teachers of foreign languages in the Lincoln School aim to give their pupils intimate and practical acquaintance with the language taught; they wish to enable the pupils to think in that language and to express their thoughts in simple form, to understand the spoken language and to read it, and to become familiar with the culture of the people who use that language. This means that the pupil must use words and idioms of that language, not as translations of English words and idioms, but as direct expressions of his own thought. The means used to accomplish this result are numerous and varied; they consist of pictures, objects, charts, lantern slides, books, magazines, newspapers, songs, games, lectures, visits to the theater, films, correspondence with foreign pupils, and other devices.

The department is at work on the problem of constructing a course of study for the junior high school. One of the most important features of such a course is the set of language pictures which serve as the starting point of instruction. Heretofore such pictures have been inartistic and crowded; efforts are, therefore, directed toward the production of pictures that shall be attractive as well as true.

The nature of this visual instruction will be illustrated by a description of the work of a seventh grade class of beginners in French. The teacher first presents, by means of a map, some facts about the geography of France, so simple that they can be understood by the pupil without recourse to English. Then, by means of a study of town and country life through pictures, a simple vocabulary is learned. Up to this point the work is altogether oral, but when the vocabulary has become familiar,

printed matter based upon the preceding work is given to the class. Oral discussion and drill are continued, but dictation exercises and simple compositions are added, and in a short time the pupils are able, without looking at the picture, to talk intelligently about various phases of French life. This work is supplemented by drills and exercises with phonetic charts and diagrams. During the first year, grammar is incidental, but not accidental; correct habits formed from the start are strengthened by instruction in formal grammar in the succeeding years.

Instruction in French, German, and Spanish is available for all pupils. The program is so arranged that every pupil may, by planning his schedule, acquire a writing and speaking knowledge of two of these languages. The methods of instruction just described are used in all three subjects.

XI. SOCIAL STUDIES

History, Geography, and Civics

Different types of reorganization of courses in social studies are being developed in different classes in the school. Following the presentation of the point of view and plans for the work in the fifth, sixth, and ninth grades, there is presented a more detailed outline of work which has been done in the fourth grade; then the work as given in the seventh, eighth, and tenth grades is discussed. The fourth grade outline is being developed by one group of workers; the fifth, sixth, and ninth by another group; and the seventh, eighth, and tenth by still another group. In later years duplicate classes will provide opportunity for full trial of each type of course organization.

A. *Social Studies in the Fifth, Sixth, and Ninth Grades.*

One of the important tasks of a modern school is to acquaint pupils with the problems which they, as active members of society, will have to help solve. Moreover, they should feel responsible for the solution of these problems. The study of history, geography, and civics is supposed to contribute towards the understanding and the intelligent solution of contemporary social and industrial problems. It is doubtful, however, whether information about the policies of Greek statesmen of twenty-five hundred years ago is as helpful in solving national and municipal problems of to-day as is the study of contemporary problems themselves and practice in thinking about them. A revision of the material used in teaching history, geography, and civics, and of the method of presenting that material has long seemed necessary. Such a revision is being made in certain grades in the

Lincoln School by uniting the three subjects in one course of study and by presenting the revised material in a series of problems chosen as the result of an inventory of civic activities in contemporary life.

Conventional courses in history, geography, and civics contain non-essential material; they present this material in a way that does not arouse the interest of pupils in matters that are important to them as citizens; and they fail to establish a connection between the subjects of history and geography and the current modes of living now included in the study of civics. By an inventory of leading contemporary problems and typical modes of living we are trying to prepare children to take an intelligent interest in their surroundings. The power to generalize can grow only from practice in generalizing. The social studies course, therefore, should give a sufficient amount of properly arranged practice in thinking.

In geography it is desired to reverse the common practice of teaching countless facts about the location of cities and about the boundaries, populations, capitals, chief cities, industries, and products of states. Instead, the relationships between people and their environments are emphasized. There is need of a course in which pup ls shall study such problems as why people live in certain places rather than others, how their activities are planned and organized, the relation between metal and civilization, and the utilization of power. Materials of human interest are substituted for the detailed and formal content of conventional geography courses. Civics also, which formerly meant a study of the Constitution, and more recently a brief introduction to civic affairs, contributes subject-matter to the content of the unified course.

This organization of materials in one course, irrespective of the subject in which they may have appeared in the traditional arrangement of material, is one of the chief features of this type of the social studies work. During the year 1920-1921, as a

trial of material, courses were organized for the fifth, sixth, and ninth grades, including discussions of the growth of industrial life, changes in the way our people live, the westward movement by which our forefathers took possession of the land between the two oceans and how they helped develop the nation, the growth of cities, and the effect of geography on travel and settlement. The organization of this material in three subjects makes it difficult for teachers to keep in close relationship matters which really are closely related.

This course, eliminating much material that is useless for children or grown people, and insuring a clearer perspective, includes whatever historical and geographical material seems now worth while. The cultivation of a sense of historical continuity is not neglected; acquaintance with "sweeps of time" and historical backgrounds is arrived at by presenting events in sequence and by contrasting current affairs with events and conditions of earlier times.

By teaching only such material as is valuable to people in their lives; by arranging the related matters in one course, thus ignoring the artificial barriers between subjects; by training the power of judgment through exercise in judging; by using children's experience as the starting point and filling the course with details that are of human interest; by these means it is hoped to prepare children to take part in social, industrial, and political life.

B. *Social Studies in the Fourth Grade.*

In the fourth grade the social study course is based upon an examination of certain problems common to all members of a community and related to questions of food, shelter, and clothing. Each problem is considered in the light of the following questions: whether it grows out of the pupils' interests; whether the study of it will afford them a variety of valuable experiences; whether it will furnish means of developing habits that will re-

sult in a sensible, useful life; and finally, whether it will increase their appreciation of their dependence on other members of society.

The class work consists of a combination of study and recitation involving the use of maps, charts, supplementary reading, excursions, experiments, class discussion, and reports, oral and written. Stenographic accounts of classroom discussion and records of supplementary reading and references are kept on file for future use. By the use of this material, the pupil should acquire information about geography, history, and other subjects, an added alertness in observing his surroundings, a questioning attitude and a growing ability to answer questions, an intelligent understanding of the simpler aspects of contemporary problems and an increasing interest in them, the power to generalize in simple ways, and growing skill in the use of maps, globes, charts, and reference books.

A typical problem was introduced by the question, "If people could have only one food, what would be the most wholesome and nourishing one they could choose?" For various reasons it was decided that milk would be the best single food. A discussion by the class and the teacher resulted in listing several aspects of this topic and the appointment of pupil committees to report on them. The division of topics and questions was as follows:

Group I.	How much milk does your household use per day?
	From whom do you buy milk?
	How do you use the milk?
Group II.	How much milk does the Lincoln School use per day?
	What was the average amount per day used by the fourth grade during the month of January?
Group III.	Why is milk one of the most important foods?
	What can we find out about its composition?
Group IV.	How much milk comes into New York City per day?
	How many people in New York use milk?
	How would the health and population of New York City be affected by the loss of milk?
Group V.	Where is milk shipped from? Why?
	How is milk prepared for the market?
Group VI.	What kinds of cows give the best milk?

One can readily see how the various classroom activities mentioned above become parts of the investigation of this topic. Some of the children, for example, found it necessary to master certain difficulties in fractions, in order to prepare their reports. In some cases the averaging of results was necessary. The situation was admirably adapted to the learning of arithmetic.

Household arts played a part in the study of milk; the children made butter and cheese; they studied the growth of bacteria in canned fruit, and were shown lantern slides from the Sheffield laboratories; they studied condensed, evaporated, and dried milk, and how to preserve it by means of heat and cold. With the coöperation of the science teacher several pupils constructed thermometers.

Various questions that were raised from time to time led to the acquisition of much valuable information. Discussions about the composition of milk, for example, led to interest in vitamines, fats, etc., and food values became an important topic. The study of pasteurization culminated in a talk by the director about Louis Pasteur, with opportunity for the pupils to ask questions about his work. As a part of the study of how milk is transported from the country to the city, one of the teachers told the class about her visit to the Sheffield plant. The class also made two trips, one to the Sheffield plant in the Bronx, where they saw the pasteurization machinery being washed and sterilized, and one to the laboratories where analysis for bacteria is made.

At all stages of the study there was a demand for written and oral English. Discussions were frequently held and reports made; other members of the group had to be convinced; intricate processes had to be explained. At one time the children wrote letters to an imaginary boy who did not like milk; at another time one or another of them held conversations with the rest of the class who by turns impersonated the imaginary boy and

raised objections to the selection of milk as the ideal single food. Good English became a social necessity.

In order to find out just how much of this information was reaching the pupils' minds, records were kept of the questions asked and misunderstandings discovered during talks by pupils or by the teacher, and of the extent to which reference material was being mastered. Toward the close of the study the children were asked to write on the topic, "How the Study of Milk Has Helped Me." The replies were regarded as indicative, in some degree, of the extent to which information acquired and attitude established might be expected to influence the writer in the purchase, preservation, and use of food. Without quoting these statements, it is sufficient to say that they did show recognition of the desirability of care in the selection of food and of knowledge of food values. The last step consisted of voluntary reports by pupils on topics in which they were interested. These reports and a list of the references used were made into a booklet by the class. Following are some of the topics that appeared.

A Modern Dairy Farm.
Machinery used by the Sheffield Plants.
The Manufacture of Butter in Ancient Times.
Breeds of Milk Cows.
Domestic and Foreign Cheese.
Our Trip to the Pasteurizing Plant.
How We Pasteurized Milk.
Our Trip to the Sheffield Laboratories.
How We Sterilized Milk.
How to Make Cottage Cheese.
How to Make Junket.
How New York Is Supplied with Milk.

C. *History, Geography, and Civics in the Seventh, Eighth, and Tenth Grades.*

As the tentative basis for the work of these years, the recommendations of the Joint Committee of the American Historical Association and the National Education Association are being followed. In testing the educational values of history, geography,

and civics, their limits as well-defined fields of knowledge are recognized, but when certain topics make it advisable to ignore subject matter boundaries, that is done. The aim is a better understanding of the problems and the complicated nature of the modern social world. Material from each of the several subjects has been introduced in so far as it contributes to this result. Materials from the several fields, especially from the fields of history and government, have been collected in the form of source studies, pictures, maps, and collateral reading, in an effort to determine the minimum content to be drawn from each field.

In the seventh and eighth grades the possibility is being tested of presenting world movements, emphasizing the participation of the United States, wherever the material justifies it. Various methods and plans of organization have been under consideration. In the study of geography in the seventh grade, emphasis is placed on the causal aspect of such changes as the shifting of national boundaries and the growth of populations. It is not the cataloguing of facts that is important, but their meaning in relation to other facts, and particularly in relation to the pupil's own surroundings and interests.

The eighth grade pupils have prepared a series of maps dealing with such periods as that from 1607 to 1660, from 1660 to 1689, and from 1689 to 1763. After carefully analyzing the historical material at hand for a given period, they have tried to tell on the map the story of that period, representing by appropriate coloring, for example, the impetus given to trade by a group of colonies, or the effects of the Puritan Revolution. The unique drawings in "The Story of Mankind" by Mr. Hendrik Van Loon are used as showing the possibilities of graphic representation. Dramatization has also been used in connection with great movements.

XII. MATHEMATICS

The work of other elementary school subjects and extra curriculum affairs often furnishes problems that can be effectively used as points of departure in the instruction in arithmetic. The pupils of the elementary school have given bazaars which, with all the details of fixing prices, calculating expenses and amounts of sales, and making change, were excellent applications of arithmetic. Charge accounts at the school supply-room furnish one basis of useful drill. Each pupil deposits a sum of money with the teacher; one child goes to the store to fill orders and to take charge of the order slips, and at the end of the month the clerk of the school sends a room bill, which is properly distributed among the children. They then total their slips, subtract totals from their balances, and carry forward the new balances, checking these with the amount left to their credit in the teacher's record. All this is then copied into their bank books. Through this and similar problems the children become somewhat familiar with such common business forms as checks, personal accounts, bills, and discount sales. The school bank administered by the seventh grade mathematics classes has also been helpful. These, however, are merely illustrations of the principle, which is assumed by good teachers quite generally, that less drill will be necessary if pupils begin the drill with a desire for mastery.

The major effort of the mathematics teachers at present is being directed toward improving the work of grades seven, eight, and nine. Extensive discussion of varied efforts toward improvement of mathematics has resulted in agreement upon the following important considerations:

(1) In junior high school mathematics, as in every other school subject we are fundamentally concerned with what the subject can contribute to a more useful life. The specific purposes are to make school studies and life out of school mean more to a girl or a boy than they otherwise would, and to give to the pupil more ready and accurate control of the numerical and spatial relations of human life.

(2) It follows that each year should give the most intrinsically valuable mathematical information and training which the pupil is capable of receiving at that time, with little consideration for the needs of subsequent courses.

(3) The content of these courses needs to be selected and organized from the point of view of the children, from consideration of social needs, and not solely from the logical requirement of mathematics. The rigid classification and the definitional method characteristic of the other materials need to be discarded in the first learning of principles.

(4) The general aim stated at the outset will necessitate the inclusion of certain elements of arithmetic, intuitive geometry, algebra, trigonometry, and statistics, although these need not be rigidly classified in their traditional divisions. The last eight series of books published for these grades have accepted this principle, though it marks a departure from current content and organization.

(5) Throughout the courses the idea of relationship or of the dependence of one quantity upon the other is to be emphasized. From the mathematical point of view, this notion of function is the unifying principle; but from the point of view of teaching, the basic, guiding principle is not found within the science itself, but within the children's learning process.

(6) In organizing the course the usual emphasis upon the special divisions of mathematics and the customary time allotment should be replaced by the introduction of topics which will insure a maximum of direct and intensive application, flexibility, and significant interrelations.

(7) The mathematics of the junior high school probably marks the end of required mathematics for most pupils, and hence must include those general mathematical ideals, tools, and habits which are now regarded as of maximum importance.

(8) Geometry furnishes a concrete source, setting, and illustration of significant number relationships, hence measurement is one of the fundamental processes by which the pupil may discover important number relationships directly through the senses. The notion of the unity of space and number should persist throughout the course.

(9) Manipulation as an end is to be eliminated. Mechanical work can be justified only when necessary for understanding fundamental principles. The formulism of ninth grade algebra results in perfecting machinery that is largely useless.

(10) Attention needs to be directed toward a better appreciation of the part that mathematics has played and is playing in the progress of civilization. Approximately a fifth of the public funds spent for education in these grades is devoted to teaching mathematics. It would seem reasonable to expect this important outcome.

(11) The material can be vitalized through the early introduction of principles that are commonly delayed until the later courses, as, for example, numerical trigonometry; and through a closer correlation with other school sub-

jects, as, for example, elementary science, mechanics, industrial art, and fine art.

(12) The material is to be socialized through the extension of units of instruction from classroom exercises and topics through a series of activities, or problems requiring co-operation, and sharing of interests, efforts and results. The course should aim to give rigorous discipline in things worth knowing. The ability of children to undertake and carry through worthwhile problems should be recognized. The course can capitalize the rigorous discipline that comes from work of this type, instead of trusting to the discipline of drill on abstract problems.

(13) Throughout these grades common sense in computing with approximate data needs to be exercised.

(14) Through observation, measurement, intuition, and a consideration of elementary properties of geometrical figures, the course should lead to control of symbols, vocabulary, and the conviction of space relationships which common experience requires.

(15) It will be necessary to continue to teach in these grades the necessary social and economic uses of arithmetic. The more technical forms of business practice, such as insurance, brokerage, stocks, bonds, etc., may well be placed late in the course to utilize the greater maturity, experience and mathematical knowledge of the pupil.

(16) A marked increase in the accuracy of computation with integers, fractions and percents appears imperative in these grades.

Using these foregoing principles as guides, the materials for grades seven, eight, and nine have been tentatively written. These materials have been used in the classes of the school in mimeographed and printed form during the last two years.

To test the validity of the organizing principles upon which the proposed junior high school mathematics course is based, and to provide means of further use for those that are found valid, two types of investigations are being conducted: first, a series of studies aimed to discover what material is surely or probably useful in modern life; second, a series of studies of methods of organizing and of teaching this material.

Some of the studies of the first kind are as follows:

(1) An inventory test, which has been given to a considerable number of children in thirty cities. It is expected that reasonably complete information about the mathematical knowledge that sixth grade children may now be expected to possess will thereby be obtained. The test consists of one hundred twenty-five very simple elements. The contents of courses of study and the opinion of text-book writers were used as the two bases of selection in constructing the test. The data so far tabulated show a very low degree of mastery. In fact less than one-sixth of the test (twenty problems) can be done by 80% of the pupils tested. This result suggests the need for more specific objectives, and more careful study of drill and relearning. The new materials now place great emphasis on both drill and relearning devices.

(2) A study of the work now being done by the mathematics teachers in fifteen schools where experiments in mathematics are now being conducted. The material appears as chapter XII in the Final Report of the National Committee on Mathematical Requirements. This study makes available the experience of a group of well-trained teachers who are given greater freedom than is feasible in ordinary schools.

(3) An analysis of the contents of textbooks now used in the sixth, seventh, and eighth grades, of several French and

German text books used in grades six to nine, inclusive, and of junior high school texts. This study presents in vivid form what was taught in the arithmetics of ten years ago, what is included in recently published texts, and what are the contents of junior high school texts. This study will be a means, not of determining what ought to be taught, but of throwing light on such questions as to why certain topics appear and disappear at different times.

(4) A study of the frequency with which certain forms of decimal and percents occur in newspapers, and in industrial, commercial, and household art journals. This study when completed will supplement similar studies by other workers.

(5) A study of the frequency of use of uncommon fractions. A count of more than two million words showed less than one hundred fractions with denominators other than 2, 3, 4, 5, 6, 8, 10, 12, and 16. It is certainly advisable to gain speed and accuracy in the use of the "common" fractions, rather than to spend much time, as we must if we use conventional text-books, in drill on the "uncommon" ones. More intensive drill on fewer elements (the common ones) seems to be more effective.

(6) A study to determine what geometric concepts, principles, terms and symbols can be taught to facilitate general reading. The geometric material on every fifth page of the last five volumes of *Popular Mechanics*, *Popular Science* and similar readings are now being tabulated to show the frequency of use of these elements.

The second type of investigation consists of a series of studies in learning. These must of necessity be undertaken by many teachers with many types of children and under a variety of

school conditions. Some of these studies are narrow and specific while some are more comprehensive and less definite.

As an illustration of the series of studies to determine the best ways of presenting such material as may be selected, there is cited the use of sets of cards to test the pupil's ability to add and subtract common fractions. These cards provide a means of focusing the pupil's attention upon his weak points, and of furnishing him with a device for recording improvement.

The most important of the investigations now being conducted is a coöperative study in which the teachers in thirty-three schools are taking part, through the use of materials for the seventh and eighth grades, and distributed in booklet form. In the preparation of this material, a trained observer studied the responses of the pupils while they were being taught by a second teacher; the material was then revised and distributed to the coöperating teachers, to be subjected to thorough tests in their class room. One of the tests consists of comparisons of standard test results between the results of teaching the materials just described with those secured by teaching either the more conventional junior high school material or standard arithmetic. Another consists of a record of the successes, failures, and interests of the pupils, of whether teachers' explanations were sufficient, practice material adequate, terminology clear, of the extent to which subject matter was taken from the children's experiences, and of the suitability of projects that were used. The coöperating teachers, when they have finished teaching a given unit of material, make systematic reports on prepared blanks. Finally, measurements are made of the extent of the pupil's mastery of each unit of material, of his growth in skill, information, and power. The results of each year's teaching are measured by comprehensive inventory tests. From a study of these various records, it should be possible to arrive at a conclusion as to the relative values of methods and materials in teaching mathematics.

XIII. THE SCIENCES IN THE HIGH SCHOOL

The science course in the high school is at present arranged as follows:

I. Junior high school.
   Seventh grade. General science, three periods a week, required of all pupils.
   Eighth grade. General science, three periods a week, required of all pupils.
   Ninth grade. General biology, four periods a week, required of all pupils.
II. Senior high school.
   Tenth grade. Chemistry, five periods a week, elective.
   Eleventh grade. Physics, or botany and zoölogy, five periods a week, elective.
   Twelfth grade. Special elective courses in physics, chemistry or biology.

The course in general science in the first two years of the junior high school is designed to consider briefly such principles of natural science as have a bearing on the pupils' surroundings, to encourage the formation of trustworthy habits of observation and expression, to interest pupils at an earlier age than is customary in the discovery of causes or operating forces, and to discover the interests and abilities of pupils, in order that they may do better work in later studies or vocations. The course materials used in general science were developed partly through experimentation in this school, and partly in similar experimentation

before the establishment of the Lincoln School. These are now available in printed form.

The problems of the seventh grade science are organized about two major topics: "The air and its relation to everyday life," and "Water and its uses." In the eighth grade the chief topics are "The use of machines and electricity in everyday life," "The earth and its relation to other astronomical bodies," "The earth's crust," and "Life on the earth." The aim of the ninth grade general biology course is to present the facts and principles of biology in such a way as to instruct the pupil in personal hygiene, the nature and control of contagious diseases, the improvement of home and civic conditions, the interrelations of plants and animals, their economic values and methods of improving them, our important wild life, the conservation of natural resources, and the enjoyment and appreciation of outdoor life.

To accomplish these aims, the topics are treated not as restricted sciences of botany, zoölogy, and physiology, but from the viewpoint of biology. In the classroom living materials, specimens, photographs, lantern slides, and motion pictures are used. In addition to the work in school, the class visits nearby markets and field regions, and each pupil makes an intensive study of one or more biological topics chosen from a list like the following:

Plants and Plant Products

Beet sugar
Cane sugar
Coal
Cork
Cotton
Linen
Lumber and lumbering
Maple sugar
Paper
Rice
Rubber
Tea and coffee
Tobacco
Tropical fruits

Animals and Animal Products

Beaver
Bees and honey
Cattle
Conservation of game animals
Corals and pearls
Dairy products
Fish propagation
Furs
Leather
Oysters and shell foods
Poisonous snakes
The rat pest
Reindeer in Alaska
Salmon

Plants and Plant Products	*Animals and Animal Products*
Tropical nuts	Seals
Twine and cordage	Silk
Turpentine, tar, pitch	Whales
Vegetable ivory	Wolves and foxes
Vegetable oils	

Since pupils who elect chemistry have had an introduction to the study of science, the usual subject matter is being modified. Through participation in interesting experimental work the pupil is led to study critically his own observations, to gain an understanding of the few facts of chemistry that are likely to appear in reading or in daily life, to become acquainted with reference books and magazines, in order that he may know where to find information, and to appreciate the importance of chemistry, not only as a vocational tool, but also as a profession.

Pupils who elect the advanced course in botany and zoölogy are enabled to obtain a somewhat comprehensive view of plant and animal life, to make a more detailed study of life cycles, structures, interrelations, and physiological processes, and to do independent work in the laboratory and in collateral reading. The course in physics is designed to unify and extend the pupil's previous study of science, to give information that will be of service in daily life, to assist pupils to discover whether they have aptitudes for advanced work in pure and applied physics, and to induce students so inclined to enter higher institutions where they may continue the study of science.

In addition to the work provided for in the curriculum, a science club includes junior high school boys who are interested in experimental work for which there is insufficient time in the classroom. Boys interested in all fields of science joined the club, which now consists of three divisions, interested respectively in chemistry, wireless, and biology. The advisers of the club are the science and industrial arts teachers.

The following program which was presented by pupils at a Parents-Teachers meeting will indicate the range of subjects included in the various courses.

ILLUSTRATIVE TOPICS

1.	The air in which we live David Richardson	General Science	Seventh Grade
2.	The weather, cyclones, and the Weather Bureau William Wadhams	General Science	Eighth Grade
3.	The construction and uses of gas burners Katherine Kosmak and Carroll Smith	General Science	Seventh and Eighth Grades
4.	Carbon dioxide in modern life (a) Breading Furst	General Science	Seventh Grade
	(b) Elizabeth Smith, Monroe Barnard, and John Kiehl	Chemistry	Tenth Grade
5.	A few animals of the pond Helen Speyer and Sto well Rounds	General Biology	Ninth Grade
6.	A few facts about snakes George Kosmak	General Biology	Ninth Grade
7.	Sulfuric acid; a chemical necessity Llewelyn Summers	Chemistry	Tenth Grade
8.	The lead storage battery Warren MacMann	Physics	Eleventh Grade
9.	Some construction problems: the Bunsen burner, steam engine and electric motor Max Parrish	General Science	Eighth Grade
10.	Food manufacture in plant life Lillian Katayama	General Science	Eighth Grade
11.	Propagation in plant life Wynne Fairfield	Advanced Biology	Eleventh Grade
12.	How Nature protects her animals George Grove	Advanced Biology	Eleventh Grade

XIV. INDUSTRIAL ARTS

In the elementary school the purpose of the work in industrial arts is to provide first-hand contact with raw materials and with the fundamental processes involved in transforming them into useful articles. In the selection of subject-matter there are two guiding principles; first, the subject-matter must be of interest and must involve work within the range of the pupil's ability; second, it must be of value socially and must illustrate modern industrial processes. Such subject-matter is found in the consideration of how food, clothing, shelter, utensils, tools and machines, books and newspapers are provided. During the study of these topics, questions about sources and preparation of materials, about manufacturing processes, and about the lives and character of the people employed in industries naturally arise. Excursions, lantern slides, discussion, and reading are valuable aids in this study.

An effective method of developing an accurate knowledge and a genuine appreciation of industrial processes and problems is secured by using clay, cement, metals, food, textiles, and printing. The aims of this course are:

(1) To develop an appreciation of the economic and social phases of industry.
(2) To give a basis for an elementary judgment in selection and use of industrial products.
(3) To acquire sufficient skill in the elements of various industrial processes to construct articles satisfying to the pupil and illustrative of the industry.

The construction of a playhouse by the first grade and the study of printing by the sixth grade will serve as illustrations of elementary school work.

The playhouse was made from a piano-box; children working as a group planned the various features of the house, and carried out their plans by working in smaller groups upon different tasks. Freedom to shift from one task to another gave every pupil various experiences. Working in this way, a floor was laid, and the inside walls and ceiling were painted. The size of and material for a rug were decided upon and weaving was begun on a hand-made loom. At first the work was done in the simplest way, neither heddle, batten, nor shuttle being used, but later those instruments were used. While the weaving was going on, other groups made chairs and a table, draperies for the windows, and clay dishes.

Through this work the pupils gained first-hand experience with building material, with textiles, and with clay as potter's material. Although the interest centered in the processes of making and using the various objects, information about the qualities of materials, and about methods of converting them into usable articles was acquired and formed a basis for further study. Much of the work bore a very direct relation to the more immediately intellectual activities of the children. For example, on the bulletin board were posted printed reports of the progress of the work and in more permanent form other printed records were made; measurements involving the use of numbers were frequently necessary; letters were written to absent children telling them of the progress of the work; and designs for clay plates and for the decoration of chairs and curtains involved application of the principles of the fine arts.

The sixth grade children, who were about to conduct an assembly dealing with the study of ballads, printed their own program, which contained material sufficient for a two-page form.

The various processes of setting the type, placing it in the

galley, taking proofs, making corrections, locking the form, inking the form, cutting the paper, and operating the press were performed by groups and individuals working simultaneously. Every pupil had an opportunity to work at each of the major operations of job printing. As part of their art study, members of the class made designs for an illustrated title cover. One of these designs was chosen by the class, cut on a linoleum block, and printed.

Questions of spelling, capitalization, punctuation, indentation, and spacing all entered into the problem of making as good a program as possible. The adjustments necessary to obtain a satisfactory proof involved much painstaking work. When the work of printing the programs and covers was finished, there was a final lesson in folding and assembling.

Some questions that arose as to methods of printing books and newspapers, and making illustrations were discussed in the industrial arts period; others became part of the work in elementary science. The class visited the publishing houses of Harper & Brothers and Charles Scribner's Sons, to see the making of books and magazines. As a result of their study of printing, the members of the class gained knowledge not only of the hand processes, but also of much of the modern machine work.

In the junior high school grades, the aims of the work in industrial arts are the same as those for elementary grades, with one important addition; it is now desirable to offer the pupil an opportunity for testing his interests and aptitudes, in order that his ability may be developed through specific training. As in the elementary school, emphasis is laid on actual productive work, but the problems chosen are more complicated and difficult; they are representative of such industries as printing and publishing, carpentry, cabinet-making, pattern-making and foundry work, forging, machine work, general construction and repair, and work with sheet-metal and concrete.

Because of advantages in having many kinds of materials,

tools, and machines available for immediate use, and also because of the extended opportunity for observing many distinct types of construction work, a general workshop plan has been developed in preference to a number of separate, specialized shops. The problems taken up in connection with each one of these activities usually result in serviceable and useful products.

In addition to the studies of modern industrial conditions and processes of manufacture, which either accompany or follow the actual making of the products, group excursions to local manufacturing plants and investigations of certain phases of the various occupations such as health conditions, safety improvements, qualifications, opportunities, wages, conditions of employment, and the like help in the formation of judgments as to the character and possibilities of industrial callings. As the occasion requires, pupils read, see motion pictures, hear specialists, or consult whatever sources of information are most needed at the time.

Three hours a week during each of the seventh, eighth, and ninth grades are allowed for the required industrial arts activities. Carpentry, concrete construction, elementary cabinet and furniture making, elementary metal work as needed in wood constructions, introductory printing, and the related drawing are taught. Although considerable freedom of choice is allowed in each division of the work, it is expected that all pupils complete the minimum requirements in each activity before the end of the year.

XV. HOUSEHOLD ARTS

In the junior high school, the purpose of the household arts course is to acquaint girls with proper methods of doing the work of a house, to stimulate liking for home life, and to make each girl familiar with the means of providing the surroundings that should be available for every human being.

In the seventh grade a double period each week is devoted to the preparation of luncheons. The pupils begin by becoming familiar with the routine work and the essentials of meal planning; then they themselves, by turns, plan and direct the meals. When it becomes evident that instruction and practice in some one process are needed, the luncheons are temporarily discontinued, and attention is focused on the problem. The program includes also a conference hour in which plans are considered and criticized, and the principles underlying the work discussed.

In the eighth grade the pupils select the furniture for a house, arrange it in its appropriate setting, and, by using reception rooms in the school, familiarize themselves at first hand with the cleaning and proper care of the rugs, walls, woodwork, and furniture. In homes which are available, opportunity is given for practice in bed-making.

Through the coöperation of a young mother in the neighborhood, the girls have been permitted to observe practical demonstrations in the care of a baby, to hear explanations of the daily routine involved, and to become familiar with the baby's clothing. That the girls should become well versed in the care of children is not the purpose of this part of the course, but it is

desirable that they should learn that the science and art underlying the intelligent care of children require careful study.

The last eight weeks of the eighth grade course is devoted to planning, preparing, and serving guest luncheons. In this work, greater maturity of judgment is needed than in the seventh grade meal planning; the girls now undertake the somewhat complicated responsibilities of a hostess who must limit herself to a specified budget. The time allowed for the course in the eighth grade is the same as that in the seventh, a double period each week for excursion or laboratory work, and a single period for study and discussion.

In the ninth grade the course centers about the choice, the making, and the care of clothing. It is usually in this period when interest in dress begins to be a strong motive; moreover, there is not the distaste for sewing that we find in somewhat younger girls, and there is a more thoughtful, painstaking, and persevering attitude. Add to this the practice of giving considerable freedom in the selection of problems, and the work becomes in many cases a distinct pleasure. Skill in certain fundamental technical processes is tested periodically, and the tasks are so chosen that all such fundamental processes are included in the work undertaken by each girl.

In designing their dresses, the girls combine the principles with which they are familiar through their study of the fine arts with the processes that they are learning in their household arts work, and care is taken to see that the æsthetic principles involved shall influence the girls in all their clothing problems.

The individual abilities of the girls are carefully taken into account; the pupil of limited skill or experience may work upon a simple piece of sewing, such as a bungalow apron or a smock, while the one who has greater natural skill or has had greater opportunities may be doing one or even two dresses. Practice in the repair of clothing is limited to darning knitted materials, the hemmed patch, and the study of common rents.

The time allowed for household arts in the ninth grade is the same as that in the seventh and eighth. The single period is used, as a rule, for the study of textile materials; physical, microscopic, and chemical tests are employed to verify the judgments of the pupils as to the qualities of the materials used. In general the aim is to develop a reasonable ability to choose clothing wisely, to make it skilfully, and to care for it and repair it economically and sensibly.

XVI. FINE ARTS

In fine arts the studies are planned to develop creative and appreciative power and to enable the pupil to understand and enjoy his surroundings more fully. Since critical judgment, like other powers, grows by exercise, the pupils are given frequent opportunity to distinguish and choose, by means of problems with lines, colors, or tones, and sometimes with combinations of all three. In poster designing, dramatization, and other activities in and out of school, pupils work in coöperation with the fine arts teacher, and apply the principles of art to their everyday needs.

The kind of work can best be explained by giving an account of what is done in certain classes. The second grade pupils, for example, with the feeling for primitive life that is always strong in little children, became absorbed in planning the scenery and costumes for an Indian play, "Little Burnt Face." After visiting the American Museum of Natural History to learn more about Indians, the children enlarged the three scenes which best illustrated the story. Each pupil then planned and painted his own costume, and through this work gained not only a knowledge of primitive life but also the beginning of appreciation of combinations of shapes and colors.

In the third grade, interest in making a setting for the story of "Sinbad the Sailor" led to studies of Oriental color and arrangement and to designing and constructing scenery and costumes. Incidentally a visit was made to the Metropolitan Museum to examine the beautiful collection of Persian Miniatures. Each child afterward expressed his opinion of the stage arrangement

and the costumes, the best designs being selected by a vote of the class. The result was a beautifully staged dramatization. Two art lessons a week for one month were given entirely to this production.

In connection with a study of "How We Are Clothed," the fourth grade made a study of weaving, the results of which they made into a book. The cover for this booklet was designed by the children in the art class, after they had seen the collection of early American coverlets in the Museum. They attempted to represent in these original designs the kind of patterns that our grandmothers had woven in their quilts, the color and texture of woven cloth being suggested by using crayon. Title pages were afterward designed which gave the children a study of artistic book pages.

Taking advantage of a class interest in colonial customs and industries, the fifth grade made a study of the types of design used in hand weaving and textiles. Each pupil planned an original design suitable for a hooked rug. An assembly was arranged later in coöperation with the pupils of the eighth grade, who contributed the results of their art study in early American houses. This study prepared the class later to appreciate a visit to the historic relics in the Van Cortlandt and Jumel Mansions and the fine colonial collections in the Metropolitan Museum.

The Elementary School gave a bazaar to raise money for the Hoover European Relief fund. Since such a bazaar, to be successful, needs much advertising, the sixth grade made all the posters. These were designed to stimulate interest in the bazaar, to advertise the various articles for sale and the events in connection with the sale, such as puppet shows, moving pictures and interpretive dances. They gained not only experience in designing and drawing but a little knowledge of the psychology of advertising.

The seventh grade work in art begins with a study of rhythm.

This study may be applied in many different ways, depending upon the interest and ability of the class. Last year after the preliminary study of rhythm, the class visited the Metropolitan Museum of Art to see in how many different ways earlier peoples have used rhythm in their designs. The Rhodian plates inspired them to make some of their own, to be given as Christmas gifts. They made a plaster mold, built and shaped the clay on this, and planned an original design which was not only suitable for a circle but good in pattern and color. The plates were then glazed and fired.

Another problem from which the seventh grade derived a great deal of pleasure and profit was the representation of animals in the "Park Zoo" in clay models. The class made sketches from life, each one choosing a different animal and drawing it in various attitudes. During the process of modeling, several trips were necessary to compare the model with the live animal. When completed the models were fired and colored, some attempting the natural color of the animal. At the end of this study the students enjoyed seeing the work of famous American sculptors in the art museums.

The eighth grade makes an extensive study of early American history. One art problem which has grown out of this each year is the study of colonial art as shown by the houses and utensils made and used by early American settlers. This has necessitated trips to old houses in and near New York, trips to the Metropolitan Museum of Art, and reports from different members of the class on old houses they have seen. During one year each student designed an original house or apartment for a family of moderate size and means, and made sketches for the furniture. Collections in the Museum, illustrated books, and magazines furnished suggestions for use. In another year, instead of applying the study of colonial art in the same way, the class designed and made some small hooked rugs which were used for table mats and pillow tops.

Since the ninth grade is the last year of the required art course, and some of the students have no further class study of the subject, it is essential to round out their brief art experience, by touching on any type of art study which they have been unable to make before. The pupils, therefore, are allowed to state their preferences, which are considered and included in planning the course for the year.

Christmas is always a busy time in this subject, for the various classes need help in designing and making their gifts. The ninth grade work this year was of two types, the boys choosing the problem of making Christmas cards, the girls making ties and dyed silk scarfs for their mothers. The boys tried the three color process, using linoleum blocks. The girls made a study of how this process of dyeing and putting pattern on cloth has been done for centuries in India.

In the Senior High School, students are allowed to elect a course of five periods a week, in fine arts, provided they are satisfying other requirements for graduation. In this course the work is planned in accordance with the tastes and needs of the students.

XVII. MUSIC

A. Singing

Cultivation and stimulation of a love for music, and pleasure in its skilful performance, are the chief objectives in the music classes and choruses. A part of most lessons in the third grade and above is devoted to learning to read music; the study of phrasing and form; and practice in rhythm by walking, marching, skipping, and by beating and improvising rhythms on the tambourine. Encouragement and an opportunity to compose tunes are given to children who have written verses, or who need incidental music in the performance of plays.

The importance of beautiful tone quality is constantly urged though very little technical vocal training is undertaken in the classroom. Individual lessons are given to older children who show interest and possess promising voices, and to those who have speech difficulties. In the classes, the children are given exercises for the free and correct production of singing voice, breath control, and enunciation; and great care is taken to develop habits that will lead to the normal use of the adult voice. Throughout the school the importance of clear and agreeable speech is emphasized.

In the organized work of music classes, sight-reading and vocal technicalities are subordinated to the need for musical expression. It is expected that as pupils learn to sing with enjoyment, they will also acquire a working knowledge of music, and an intelligent interest in it.

Only that material is used which possesses real musical value and which is within the children's understanding. By this pol-

icy we hope to establish critical standards. The choice of songs when possible, is correlated with other work of the classes. Festivals and special assemblies afford natural and stimulating motives for the careful preparation of seasonal, patriotic and special music.

Occasional assemblies are used for ensemble singing, group singing, individual performance prepared by outside instruction, and for recitals by artists. The thirty-minute high school chorus meeting each week is given to the rehearsal of songs for assemblies, to music incidental to the programs for special occasions, and to the group singing of favorite songs. In order to develop general interest and appreciation, a pupil is sometimes appointed to prepare a story about the life and work of the composer of a song that is being rehearsed.

The pupil who leaves school with a store of knowledge concerning musical structure and with little or no enthusiastic appreciation, and the pupil who takes away a love for music and has learned some pleasing songs but no technique, are both failures from an educational point of view, the second probably less to be deplored than the former. We are endeavoring to find a balance of emphasis which shall develop ability and pleasure in singing and in other types of music along with some knowledge of the structure and technique of music.

B. Creative Music

For want of a better name, certain activities have been designated as creative music. This work, which is based on the natural evolution of music and musical instruments, involves the making of percussion, wind, and stringed instruments, and the use of them in class playing.

The aim of the work is to lead children to experience music concretely; to develop their understanding and power through their natural tendencies toward construction and experimentation; to give children, whether talented or not, the means of

making music on instruments suited to their individual capacities; and through ensemble playing to cultivate concentration and artistic sense.

Heretofore, school music has been rather an isolated subject. Creative music provides the possibility of educational guidance through a sequence of musical experiences in which practical experimentation, constructive hand-work and artistic expression are coördinated. The correlation of intellectual, manual and æsthetic factors contributes to the pupil's musical development.

These activities have been directly correlated with:

(a) Manual Training—in the making of instruments (using the school workshop)
(b) Fine Arts—in the form and decoration of instruments made
(c) Vocal Music—in learning songs to be played upon instruments
(d) Dancing—in cultivation of a sense of rhythm
(e) Science—the physics of sound involved in making the instruments and the nature of the materials used
(f) Nature Study—Birds whose songs were studied
(g) Mythology—Legends of early instruments: lyre, Pipes of Pan, etc.
(h) Ethnology—In the study of instruments and customs of primitive peoples.
(i) English—In presenting accounts such as the following program given by the fourth, fifth, and sixth grades. This program also indicates the scope of the work given.

GRADE IV. PERCUSSION INSTRUMENTS

How We Made Our Drums . . . . . John
A Dancer's Song . . . . . Class
(Some play and sing while others dance)
Bells and Metal Bars A Bell Song. . . . . Priscilla
The Tubaphone We Made Monkey Brown. . . . . Richard
Sleighbells . . . . . Tom
Time to Come Home, while the class sings.

How We Get Music from Drinking Glasses . . . . . Natalie
A Glass Quartet—composed and played by Janet, Katherine, Larry, and John
A Glass Quintet—Lavender's Blue . . Jack, John, Hugo, Priscilla, and Lawrence
How We Made Our Marimbas . . . . . Jack
Twinkle, Twinkle, Little Star
Merrily We Skip Along } . . . . . Class
The Minor Mode . . . . . Mac
Two original compositions in the Minor Mode by Mac and Richard
Wooden Shoe Dance . . . . . Class
Old Mother Hubbard—composed by the class . . . . . Class

Grade V. Wind Instruments

How We Made Our Pipes of Pan . . . . . Page
Song of Syrinx
A Beethoven Hymn } . . . . . Class
Original Wind Instruments
Barbara's paper tubes
David's curved metal bar
Helen's bottles of water
William's crab claws
Susan's milk straw
Gourd oboe, explained and illustrated by Page
Reed trumpet, explained and illustrated by John
Reed clarinet, explained and illustrated by Sophie
Chinese tohe, explained and illustrated by Claire
Triton shell trumpet, explained and illustrated by William
Flageolets, explained by Susan
A Market Song
Good Pierrot } . . . . . Class
Flutes
Reed flute, explained by Walker
Chinese flute, explained by Pauline
Six-keyed flute, explained by Sarah
Piccolo, explained by Maud
Boehm flute, explained by Elizabeth . . . . . Florence
Ocarina explained by Thalia
Original composition by Susan, Helen, and Sophie.
Bird Songs. The class will play on their ocarinas 3 bird notes to be identified by the audience.

Moon Song . . . . . Class
Day Is Over . . . . . Class

Grade VI. Stringed Instruments

The Simplest Stringed Instrument . . . . . Louise
Tension Bow . . . . . Theresa
Egyptian Shoulder Harp . . . . . Nelson

Curved Theban Harp . . . . . Bud
Two original instruments designed by Alex and Charles . . . Lawrence
Our Chinese Kins . . . . . Donald
A few original compositions on the Chinese scale.
Our Gourd Experiments. . . . . James
The Development of the Lyre . . . . . Tim
A Greek Melody in Several Modes . . . . . Class
Original Melodies in Several Modes . . . Marion and Charles
A Gavotte from one of Gluck's Greek Operas. On Lyres—played by class
Our Cocoanut Banjos . . . . . Marion
Jig on the E String
Yankee Doodle } . . . . . Class
Class Jig (composed by class)
"O Susannah". . . A Negro Folk song, sung and played by class
Modern Banjos . . . . . Explained by Nelson
"My Old Kentucky Home," sung by class with accompaniment played on banjos by Nelson, Tim and Charles.

The Lincoln School Orchestra includes pupils from both the high school and the elementary school. Any pupil who has had instruction on an orchestral instrument may become a member. the purpose of the orchestra is to stimulate interest in orchestral music, and to provide opportunity for sight reading and ensemble practice. Since a number of the pupils are beginners, music of an easy grade has been used. Short programs have been played for the school, and selected groups of players have at times accompanied the regular chorus work. On one occasion a full program was given at an assembly of the whole school.

A limited amount of special lessons on violin and piano are given in the school. This is done in the effort to determine in what ways and to what extent such individual instruction can be made a part of the regular educational program of children while in school.

XVIII. PHYSICAL EDUCATION

The work of this department has three aspects: (1) Medical inspection and supervision, (2) Physical education and recreation, and (3) Health instruction and guidance. The general purpose of keeping the children physically fit and enabling them to acquire and maintain the necessary vigor is carried out by means of coöperation between the school physician and the physical education teachers.

The school physician is in attendance at the school every morning from twenty minutes before nine o'clock until ten minutes past, and longer if necessary. Any child who has been absent from school reports to the physician before going to his classroom. He is examined and if in a proper condition is readmitted, otherwise is sent home at once. Largely in consequence of this inspection we have been able to reduce the percentage of school days lost from 15 per cent. to 11.5 per cent.

Once a year each child is given a complete physical examination with special reference to defects of posture, eyes, ears, air passages, teeth, heart, lungs, and nutrition. The findings are recorded and compared with those of the previous year. At the same time a report is sent to the parents calling attention to any defects and advising that they consult their physician. One of the teachers of the school is present at these examinations and in consultation with the school physician, plans the correction of defects which may be remedied by physical exercises.

In accordance with our belief that exercise in self-control, self-direction, and coöperation is an essential feature of any educational program, every opportunity is given for the exercise of initiative on the part of the children. The games they play are,

in many cases, of their own invention; the contests between teams include events that have grown out of the play of the children themselves. In planning and conducting these games, the children follow principles of sportsmanship which, with the guidance of their teacher, they have set up. In all grades except the first, the children of each team elect a captain, and very early begin to demand that he exhibit a high degree of leadership and maintain a high standard of sportsmanlike conduct.

The children of the first three grades play games which require only a small, though gradually increasing, amount of organization, and which exercise the big muscles and stimulate the heart and lungs. In the later grades games and exercises that require more specialized skill are introduced. In certain phases of their class work, including the use of apparatus, all classes are given tests of skill which by careful grading are adjusted to the abilities of the groups, so that each child can, with reasonable effort, pass all the tests to which he is submitted. In this way, not only does the muscular development go on, but there is also developed the feeling of self-confidence that results from overcoming difficult obstacles by persistent effort. Twice a year all the elementary grades meet together for an afternoon of games and contests between the two teams of each grade.

In the rhythm work there is provided an important opportunity for the children to create and give expression to their own feeling for what is beautiful, amusing, and interesting. This is carried on in the primary grades by means of informal dramatic and singing games, and simple folk dances. The children impersonate giants, elves, Indians, Mother Goose characters, and animals, whose actions they imitate on the basis of their own observations and imagination. In the higher grades, folk and gymnastic dances of greater difficulty are used; here, also, many of the dances are originated by the children and based on the natural rhythms which they enjoy. These dances are occasionally given in the elementary school assembly.

Besides the activities for elementary school pupils already described, which are provided for in the school schedule, there are several after-school boys' and girls' clubs. A fee is charged for membership in these clubs, which meet four times a week, from three o'clock until twenty minutes before five. Their time is given to out-of-door play; they meet indoors only when the weather is unfavorable. For the most part, their activities consist of games and play in the parks and on the school playgrounds and occasional trips on Saturdays.

In the high school the ideals of sportsmanship, coöperation, and initiative are cultivated in more highly organized games and contests. In the autumn, the boys play soccer, football and field hockey, or practice track athletics; in the winter they play basketball and other games indoors; and in the spring, the playgrounds are used for baseball, playground ball, or track and field games. In the autumn the girls play hockey, soccer, and baseball, and give some time every week to folk and natural dancing. In the winter they play basketball, and other team games, and practice natural gymnastics and apparatus work. In the spring they return to the open air for field and track practice and baseball. The program of physical education for pupils in the high school includes four one-hour afternoon periods, a half-hour period each noon for free play or organized games requiring only a minimum of strenuous action, and a number of two-minute relaxation periods.

Physical ability tests are given throughout the year to all the pupils. Pupils are thus informed as to their physical needs and encouraged to make special efforts to improve. Instructors are also enabled to grade pupils intelligently and to adapt the exercises to the strength and needs of individuals.

Competition in athletics is confined to groups within the school. In each class the boys and girls are divided into two teams, the Orange and the Blue, which are in competition with each other throughout the year in various sports. The captains

and the assistant captains of these teams compose two athletic councils, one of boys, the other of girls, who assist in the direction and control of the affairs of the two organizations, such as schedules, tournaments, meets, and gymnasium classes. They also have a voice in the award of athletic insignia. The two outstanding competitive events of the school year are the mid-winter indoor meet and the spring outdoor meet. In these two competitions, all the Blue teams compete against all the Orange teams; that is, all the boys and girls of the senior and junior high schools take part in events of graded difficulty, and points won by individuals count for the team score.

The importance of good health habits is constantly emphasized throughout the school. In the elementary school instruction is given by the grade teachers assisted by the teachers of physical education, elementary science, and household arts. In the high school this instruction is merged with biology, general science, and household arts.

XIX. THE LIBRARY

A broader view of education has necessitated the development of school libraries. Pupils no longer study one textbook, but in every subject in varying degrees, sources are consulted, authorities compared, and pictures, maps, and lantern slides used for the sake of greater accuracy and interest. A school library worthy of the name, must, therefore, be a vital part of the school, functioning in connection with every department and not serving merely as a storage place for material.

The library in a modern school has a many-sided task. It must provide a working collection of books which shall serve the purposes of pupils and teachers in connection with classroom and laboratory work. This collection should represent every department. Mr. Glenn of the Lincoln School has made a study of the distribution of books according to the different departments of teaching in one thousand high school libraries in this country.* He shows by a series of graphs the unequal distribution of books which has sometimes resulted in the idea that the school library belongs primarily to the English and History Departments. His study should be of value in encouraging a more nearly equal distribution of books, and in arousing greater interest on the part of teachers of science, industrial arts, mathematics, household and fine arts in coöperating with the Library.

Books for general reading which will broaden the interest of pupils and help to cultivate a taste for good reading are an important part of the library. Once it would have been an almost revolutionary idea to think that a school library, where children

*_School, Science and Mathematics_, March, 1921, _Library Journal_, March 15 and April 1, 1921.

may go and select freely from the shelves, might be a substitute for a list of required reading. There must be, of course, guidance from teachers and librarian, and lists of various types to stimulate interest, but even so, the reading done by boys and girls will become, under these conditions, something genuine and spontaneous.

There must also be provided books, pamphlets, and other material which will aid in the choice of vocations, and a collection of illustrative material—pictures of industries and mechanical processes, postcards, lantern slides, stereoscope pictures, trade catalogues, etc.—classified and indexed so that it is easily available for the use of every department in the school.

The library of the Lincoln School is equipped with a card catalogue, magazine indexes, and important reference books. Systematic instruction in the use of the library is given in order that pupils may be able to make intelligent use of this and also of larger libraries. At the same time these lessons are not additional tasks for which pupils and teachers must take time from an already well-filled program; they are a part of the curriculum. For example, geography is a subject with which this work combines easily; for two years therefore a course of ten lessons in the use of the library has been given to the seventh grade in connection with their geography work. The class met sometimes in the library and sometimes in the classroom. The teaching was done jointly by geography teacher and librarian. When the librarian had explained a reference book to the class, the teacher added comments on its value with reference to work the class was doing at that time.

The children were given, first, a lesson in the printed parts of a book, table of contents, index, etc. They put their knowledge into practice by using the index to discover what information about the products of France could be found in the books available. Later, after the class had been shown the proper form of entry, these references were combined into a bibliography. The meaning

of the copyright date was discussed, and its importance brought home by asking the class to decide which book of those they had examined contained probably the most up-to-date material.

After using such books as Allen's "Europe," J. Russell Smith's "Commerce and Industry," etc., they learned how they could supplement this material by such reference books as Mawson's "Geographical Manual," the World Almanac, the Statesman's Yearbook, U. S. Statistical Abstracts, etc. After they had learned to handle the individual books readily, they were shown the arrangement of books on the shelves; that is, how the books are grouped by subjects. Then the use of the card catalogue was explained to them; how, for example, they could find what books the library contained on a certain subject, what books by a certain author were in the library and whether the library contained a book with a given title. Several children then went to the catalogue in turn, the first finding the group of cards which represented the books or parts of books in the library on a specified topic, while one or two others read off the references by author, title, and call number. The class made a list of these as they were read and certain children went to the shelves to find the books. Instead of a formal test at the end, the class spent a period in the library putting into practice the knowledge they had gained in using the library's resources, by locating material independently for their next topic in geography. Lessons in the use of the library have been given to the eighth, ninth, and tenth grades in connection with general science, English, social studies, biology, and chemistry.

The library in the Lincoln School works with the elementary school as well as with the high school. It provides for the children's home reading or for reading which may be done during school hours, books which are used by the grade teachers and the librarian, working in coöperation to stimulate reading, to supplement the course of study, and to help in guiding the individual interests aroused by the course of study. Brief talks about

books are given to the grades, and stories are told by the librarian to arouse interest. Annotated lists are sent to the classrooms to aid the children in choosing the books they wish to read. Records are kept of the reading done by individual pupils.

The Elementary School pupils also use the library for reference work as groups and as individuals. Thus, seven members of the third grade wrote letters to the librarian stating a point on which they wanted information. There were such questions as, "How do dragon-fly nymphs turn into dragon flies?" "Something about caddisfly cases," "A book that will tell about making a siphon." These letters were sent to the library beforehand so that the librarian, consulting with the class teacher and the science teachers, could provide material simple enough for use. They not only found the facts they needed, but learned that the library was a useful place when they needed information. Brief descriptive reports about the books they had read were written by the pupils, in order to help other children to know whether they wished to read these books, and to help the librarian and the teachers to study the children's reading tastes. A file of these notes written by pupils of all grades from the third to the twelfth is kept in the library where the children have access to it.

The use of the library for reading and reference work, involving, as it does, care of books, promptness in returning them, and courtesy in the reading room, is an important factor in cultivating the ideals of responsibility and consideration for others which belong particularly to a democratic school. From time to time, assembly exercises are held at which the pupils present discussions about how books are written, printed and manufactured and about the proper care of both library and text books.

The library, therefore, instead of being a collection of books and pictures which constitute a separate department of the school, is really an organic part of the work of instruction in every subject taught, and the librarian is a regular member of the school's staff of teachers.

XX. STUDENT ACTIVITIES

I. *Educational Excursions.*

Access to museums, parks, and other places of interest is often desirable. In order to conduct such excursions with small loss of time, the school provides a motor bus large enough to carry an entire class and the teacher, so that it is possible to make short trips without interrupting the program. Plans for excursions are passed upon and approved by a member of the staff charged with that duty.

II. *The Student Councils.*

The pupils of the first six grades have organized a council of representatives elected by each class. These representatives, and a coöperating teacher constitute a governing body whose members, though they do not assume full responsibility for self-government, have opportunity to exert strong influence. The constitution, and rules of procedure of the student councils are available for any who are interested in elementary school councils.

The high school council offers opportunity for the older pupils to assume greater responsibility. It satisfies the need for free discussion and for the establishment of school tradition. Most of the business is in the form of discussion of student problems and voting on the reports of instructed committees.

III. *Standing Committees.*

Various routine matters are carried on by standing committees of pupils operating under the student councils. The lunchroom committee is charged with supervision of the appearance and conduct of pupils in the lunchroom and during the informal supplementary luncheons. The Bulletin Board Committee su-

pervises the use of the bulletin boards, so as to avoid conflicts. The Fire Drill Committee attempts the effective administration of fire drills. The Lost and Found Committee collects all articles lost in the building; the pupil in charge is paid for his services from the proceeds of fines levied for the return of lost articles and from receipts from the sale of unclaimed articles. The Publicity Committee keeps the pupils informed of the work of the student councils, by making reports at class meetings.

For more than two years the Insignia Committee worked to develop a system of giving recognition to pupils of unusual merit in citizenship, athletics, and scholarship. The plan as finally adopted in an assembly of the whole school provides that pupils be ranked on the basis of various tests, and that permission to wear a special school pin be granted to those in the upper fifteen per cent. in any of the three fields.

The Discipline Committee aims to secure proper conduct in halls and in the elevator. A pupil reported for misconduct is given a hearing; if he is dissatisfied with the committee's decision, he may appeal to the director or to the principal of the high school. Of the eight members of the Discipline Committee, two are members of the council and hold office throughout the year; the other six are appointed from the high school at large at the beginning of each month. The duties of the Library Committee are similar to those of the Discipline Committee; its members aid the librarian, by imposing penalties when necessary, in collecting overdue books and discouraging careless handling of books.

Besides these routine matters, the council issues charters to clubs, encourages the composition of songs and cheers, entertains visitors from other schools, and conducts such special projects as health campaigns, school parties, bazaars, and athletic meets. In coöperation with teachers it plays a very large part in promoting the best interests of the school. The school is not "self-governed" but full coöperation between pupils and teachers is desired as a means of developing proper school government.

IV. *The Student Employment Bureau.*

The student employment bureau is under the supervision of two teachers who make all appointments and check all claims for payment. Through it the older pupils find useful and instructive employment in the school out of class hours. Pupils from all classes of homes are given opportunity, under supervision, to do such work as checking and receiving pay in the lunchroom, assisting in the library or classroom, scoring test papers, printing announcements and school forms, mimeographing, and constructing and repairing school furniture. The amount paid for work varies from twelve to thirty cents an hour, the rate being determined by the nature of the work and the quality of the service. Although no pupils are able to give more than a few hours a week to such work, almost all the high school students do some of it during the year. Such tasks make it possible for pupils to use their special abilities outside the classroom and furnish an excellent substitute for the responsibilities assumed by children in small communities.

V. *The School Bank.*

A bank is operated in connection with the mathematics of the seventh grade. Under the guidance of a teacher who explains the keeping of records and checks the accounts, each pupil acts as banker for one week. The bank serves three purposes: it makes the computation of interest a problem of real significance; it provides first-hand experience in important phases of business practice; and it helps to form habits of thrift. A card catalogue of depositors, a metal bank box, a cashier's cage, and regular banking hours make the bank a genuine business institution.

VI. *Student Publications.*

The students issue two publications, "Lincoln Lore," a monthly magazine, and "The Lincolnian," the year-book of the graduating class. The contents of both are largely assembled, criticized and rewritten in the English classes, where opportunity is given, not only for composition, but also for judging the

value of contributions. The staff of "Lincoln Lore" consists of twelve high school pupils, representatives of the elementary grades, and an English teacher. The amount of material used is restricted, in order that what is published may be of satisfactory grade.

VII. *Scout Troops.*

Troop 612, Boy Scouts of America consists of boys in the high school. The troop is divided into two sections, one for the junior high school, and one for the senior high school. The junior section meets one afternoon each week for discussion of business, instruction and examination in scout tests, patrol contests, and practice for scout demonstrations. At other times there are "hikes," joint meetings with the Horace Mann School troop, initiation parties, and social meetings at the homes of troop members. Meetings of those present are held during the summer at Camp Lincoln.

Membership in the senior section is open to senior high school boys who, as members of the junior section, attained a high grade in scouting. The aims of this section are to maintain the interest of older boys in scouting, to help the junior section, and to promote good fellowship through social activities. The members have given valuable aid in various movements by their effective coöperation.

VIII. *Girl Scouts of America.*

A Girl Scouts troop has also been organized in the school. In April, 1919, there were eleven tenderfoot scouts; in 1920 there were two patrols; and in September of that year the number enrolled justified the formation of two full troops. In 1921 the two troops were united into a strong single troop, and two new patrols were organized. By June, 1922, all but a few members of the four patrols were second-class scouts. The scout activities are closely related to the work of the school, and the aim is always to cultivate a sense of responsibility for the betterment of the school. The work done in the classroom is a frequent source

of ideas in planning bazaars, fairs, and parties, and money earned at such affairs is given to a deserving organization or needy family.

Like the boy scouts, the girls have many interesting outings, parties, and excursions. High standards of health and usefulness are constantly urged.

XXI. MISCELLANEOUS

Parents-Teachers Association

Meetings of the parents and teachers in the Lincoln School are held for the free discussion of matters of general interest, as well as those which particularly relate to the pupils in the school. Each year there are four general meetings with programs of interest to parents with children in any part of the school. Special afternoon meetings are held for parents of children in particular grades, the programs being arranged by committees consisting of the teachers of the grades and two or three mothers of pupils in the classes.

The topics presented may relate to educational philosophy, to experimental work, to school procedure, or may consist of demonstrations by pupils. Some of the topics that have been considered are: individual and group intelligence tests, modern educational theories and practices, educational reformers and reforms of the past, a program of national education, and the problem of summer vacation work. A typical program will serve to show the nature of the topics and the procedure in presenting them.

"ANNOUNCEMENT OF PARENTS-TEACHERS MEETING

Friday, April 8th, 8:15 P. M., 1921

I. *Purpose of the meeting.*

It has been decided that, instead of giving the entire evening to a single topic, opportunity shall be given for brief discussion of several topics. Accordingly the Program Committee re-

cently sent to all parents a request for suggestions for the special program announced herewith. The topics suggested, except two, are included.

II. *Topics.**

1. The relation of The Lincoln School's Program to college entrance.
2. The purpose of homework and methods of doing it.
3. Periodical reports concerning pupils' progress in school.
4. Should the school change its present provision for instrumental music?
5. The new building and location, and miscellaneous topics concerning school procedure. In response to numerous questions, the Director of the school will exhibit and discuss the building plans; also, luncheon arrangements for pupils, proposed transportation arrangements, school costs, and other specific questions which have been asked regarding the work of the school will be discussed.

In the case of the two topics not included—Purposes and method in Social Studies, and in Foreign Languages—it seemed best to the Program Committee to arrange for a full evening's program upon each topic at a later date.

III. *Plan of the Meeting.*

The Committee has decided to have brief explanatory statements and brief discussions. Lengthy discussions will obviously be impossible, but it is deemed best for this time to organize this type of program so that several matters may be presented in the one evening."

The splendid coöperation of parents with teachers in discussing these and other topics aids in solving many school problems, and in developing a common and sympathetic interest in education.

COLLEGE ENTRANCE

The Lincoln School is not primarily a preparatory school, but most of its pupils plan to enter college. The course of study now in operation is accepted for entrance to colleges such as Harvard, Yale, Columbia, Cornell, Barnard, Vassar, University of Chicago, University of Michigan, and the Massachusetts

*The names of the speakers appeared in the printed program but are omitted from this report.

Institute of Technology. Few colleges still require an ancient language for college entrance.

SCHOOL VISITORS

From its beginning, the school has been constantly visited by persons interested in education. Visitors have come from all parts of the United States, and from foreign countries. Many of them have been of great help to the school through suggestion, criticism, and coöperation; and a few have, at our request, remained several days, and have submitted written reports regarding the school.

Since experimentation with the hope of improving education is the prime purpose of the school, obviously not many visitors can be admitted to the school on any one day. It has become necessary to limit the number, and to ask those desiring to visit to make appointments in advance. In this way disappointment and inconvenience both to visitors and the school are avoided. The school plans to admit not more than a half dozen visitors on any one day, in order that those admitted may go about the school without disturbance to classes, and with greatest satisfaction to themselves.

THE NEW SCHOOL BUILDING

When it was decided to establish the Lincoln School, it did not seem wise to invest the large sum necessary for a new building. The building at 646 Park Avenue was therefore rented for five years. After two years it became necessary to purchase an adjoining dwelling house for the use of the first three grades. In anticipation of the termination of the period for which the Park Avenue building was rented, and because of the desire to provide for the increased needs of the school, the site on which the present building stands, on 123rd Street, between Amsterdam and Morningside avenues, was purchased. The new building was occupied on April 17, 1922. It provides adequate space for classrooms,

laboratories, library, playgrounds, etc., and for investigators. Buses are operated to transport pupils from the former school neighborhood to the new building.

ADMISSION, FEES, AND SCHOLARSHIPS

The classes are so well filled that the school has been unable to accept all or even most of those desiring admission. Owing to the increased facilities of the new building, however, it is now possible to add a few pupils each year for several years. Applications are considered and reported upon in the spring of the year preceding that for which application is made. Those desiring to enroll children should ask for application blanks.

A number of partial scholarships are provided, so that tuition charges may not prevent worthy pupils from attending the school. Applications for scholarships should be made to the director.

Three-fifths of the tuition charges is due at the opening of the school year, and two-fifths on or before January 15. The tuition rates are as follows:

Grades 1 and 2	$275
3 and 4	$300
5 and 6	$350
7 to 12	$400

SCHOOL CALENDAR, 1922–1923

September 18–22	Week of Teachers' Conferences
September 25	School opens
November 7	Election Day
November 30–Dec. 1	Thanksgiving Vacation
December 22	Last day of School before Christmas Vacation
January 2	Tuesday—School Reopens
February 22	Washington's Birthday
Apr. 6–15	Spring Vacation
May 30	Memorial Day
June 8	School Closes