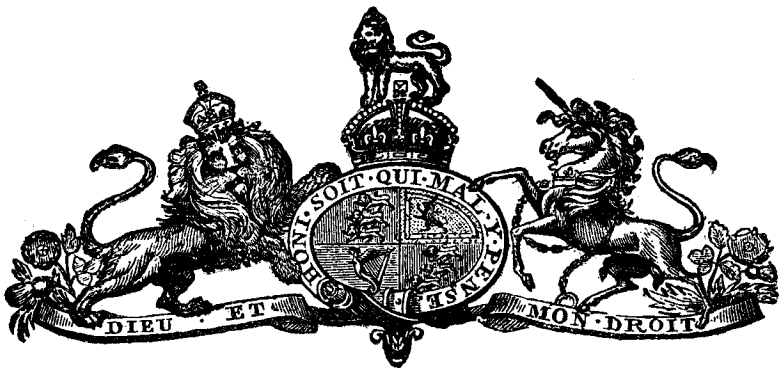

SUPPLEMENT

TO THE

NEW ZEALAND GAZETTE

OF

THURSDAY, DECEMBER 11, 1913.

Published by Authority.

WELLINGTON, TUESDAY, DECEMBER 16, 1913.

Amended Regulations under the Education Act, 1908, and its Amendments, as to the Organization, Inspection, and Examination of Public Schools, and the Syllabus of Instruction.

LIVERPOOL, Governor.

ORDER IN COUNCIL.

At the Government House, at Wellington, this fifteenth day of December, 1913.

Present:

HIS EXCELLENCY THE GOVERNOR IN COUNCIL.

IN pursuance and exercise of the power and authority vested in him by the Education Act, 1908, His Excellency the Governor of the Dominion of New Zealand, acting by and with the advice and consent of the Executive Council of the said Dominion, doth hereby revoke the regulations under the said Act, dated the twentieth day of April, one thousand nine hundred and four, the seventeenth day of September, one thousand nine hundred and six, the twenty-third day of March, one thousand nine hundred and eight, the twenty-third day of May, one thousand nine hundred and eight, and the twenty-ninth day of May, one thousand nine hundred and eleven, and in lieu thereof doth substitute the regulations herein contained; and doth declare that this Order in Council shall come into operation on the first day of January, one thousand nine hundred and fourteen.

I. ORGANIZATION, INSPECTION, AND EXAMINATION OF PUBLIC SCHOOLS.

1. EVERY public school shall, as a general rule, be visited at least twice in every year by a Public-school Inspector. At least ten days' notice of the date of one of these visits shall be given to the head teacher by the Inspector: for any other visit no notice shall be required. After one of his visits in each year the Inspector shall present an "inspection report." A special report may be presented after any visit.

Anything in this clause notwithstanding, any visit of inspection may, unless the Education Board otherwise direct, be omitted for a period not exceeding one year in the case of a school with whose general efficiency the Inspector is thoroughly satisfied.

In these regulations a "year" means a year beginning with the 1st January.

2. For purposes of instruction the pupils of every public school shall be divided into three divisions—namely, the Preparatory Division, the Junior Division, and the Senior Division; and the syllabus of work for each division shall be as defined in clauses 23 to 39 below.

The Preparatory Division will in general include those children who have been under instruction at school or elsewhere for not more than two years.

The Preparatory Division may be divided into two classes, the lower class being called P1 and the upper P2; if necessary these classes may be further subdivided—*e.g.*, into P1 lower and P1 upper, P2 lower and P2 upper. Generally speaking, P1 will not contain any children who have been for a year or more under instruction.

The Junior Division will in general consist of those children who have been under instruction at school or elsewhere for more than two years, but not more than four years.

The Junior Division may be divided into two classes—those of the first year (Standard I) and those of the second year (Standard II)—which may be termed S1 and S2 respectively.

The Senior Division will in general consist of those children who have been under instruction at school or elsewhere for four years or more and have not yet gained a certificate of proficiency. The time spent in the Senior Division will for the average boy or girl be four years, and this division may be subdivided into four classes accordingly, which may be termed S3, S4, S5, and S6, corresponding to Standards III, IV, V, and VI respectively. Whether the division be so subdivided or be arranged in two classes only, the terms so used shall be taken to represent the standard of work in any subject corresponding to the work of the four respective years spent by the average boy or girl in the Senior Division.

The classes S3 and S4, English, will include all the children doing the work in English prescribed for the first and second years of the Senior Division; S5 and S6, English, will include those doing similarly the work prescribed for the third and fourth years of that division. In like manner, S3 and S4, arithmetic, will include those children who are doing the work in arithmetic prescribed for the first and second years of the Senior Division; and S5 and S6, arithmetic, those doing similarly the work prescribed for the third and fourth years of that division; and so on for other subjects, although it will not in general be necessary to make more than two classifications—namely, that for English and that for arithmetic respectively.

S7.—Pupils who have gained a certificate of proficiency or have reached the standard of education indicated thereby may be classified as belonging to Class S7.

Nothing in these regulations shall be so interpreted as to prevent pupils ordinarily classified as of the Junior Division, second year (S2), and of the Senior Division, first year (S3), respectively from being instructed together in a common class, if convenience so dictates, and in a program of work suitably modified accordingly to meet the circumstances.

3. The classification of a school shall be made by the head teacher, who shall have full discretion to arrange his pupils in different classes for different subjects according to their ability and proficiency with respect to the several subjects, and to group two or more classes for instruction in one subject. This discretion he must exercise to the satisfaction of the Inspector, who will regard as an element of weakness any undue complexity in the classification of pupils. As a general rule, pupils should be classified according to their capacity and attainment in English and arithmetic respectively—classification in English being determined by proficiency in English, and classification in arithmetic by proficiency in arithmetic.

4. In general, the classification of a school shall be determined at the beginning of the year; but, if necessary, promotion of individual pupils from class to class may be made at any other time by the head teacher. In the Preparatory Division, especially where it contains three or more classes, it will generally be necessary to make promotions of pupils at other times besides the beginning of the year.

No part of these regulations is to be read in such a way as to discourage or prevent the more rapid promotion of children who exhibit more than average mental capacity or intelligence as compared with other children of the same age.

5. (*a.*) The head teacher shall, not later than the 1st March in each year, draw up schemes of work for the year for all the classes in his school, and shall hold thereon periodical examinations of the classes, the last of which, called the "annual examination," shall be held in November or December, and he shall keep for the information of the Inspector a record of the nature and results of these examinations.

In regard to any periodical examination, including the annual examination, the record kept in the school shall be held to be sufficient if it contains the particulars referred to in (*a*) and in (*f*) of clause 6 hereof, and also, in lieu of (*g*), merely the changes from class to class made as a result of the examination to which it relates.

(*b.*) The written questions used at the periodical examinations of the Senior Division, and the pupils' answers thereto, shall be kept in the school for reference for twelve months, or for such less period as the Inspector may direct.

6. Immediately after the annual examination the head teacher shall forward to the Inspector, on forms provided by the Department, class-lists setting out the results of that examination. The class in which a pupil has been placed for English during the preceding three months shall determine the list on which his name shall appear. The class-lists shall contain—(*a*) the names and ages of all the pupils on the school roll; (*b*) the number of half-days on which each pupil has attended the school since the beginning of the year; (*c*) the number of half-days each pupil has attended the class in which he is placed for English where that number is different from the number in (*b*); (*d*) the class in which each pupil has been placed for arithmetic during the preceding three months, where that is different from the class in which he is placed for English; (*e*) the number of half-days each pupil has attended such class, where that class is different from the class in which he is placed for English; (*f*) the number of marks on a scale 0 to 20 gained by each pupil of the Junior and Senior Divisions in (1) reading, (2) spelling and writing, (3) composition, (4) arithmetic, and a note of any special excellence or special weakness shown by him in other subjects; (*g*) the class in which it is proposed to place each pupil in consequence of the results of the annual examination, taken in conjunction with those of the other periodical examinations and with the general character of his work during the year; (*h*) a general estimate of the quality of the work done by the class in each of the other subjects; (*i*) a summary showing the number of pupils on the roll of each class, the number present at the time of the examination in English, the aggregate ages and the average age of the pupils in each class.

For pupils of S6 the class-list, if so required, shall be on the form provided in the case of applicants for certificates of proficiency and competency in this standard, and the provisions of this clause in any such case shall with regard to these pupils be taken to be modified accordingly.

7. (*a.*) The Inspector may return the copy of the class-lists of the annual examination to the head teacher, and require him to note in the column for remarks the reason for more or less rapid promotion in the case of any pupil, or to give an explanation in the case of any pupil whose age is much above the average age of the pupils in that class for that school or that education district, and to forward such of the examination papers as the Inspector may desire; and the Inspector may approve or not of the sufficiency of the reason or explanation given.

If it appears to the Inspector that the class-lists of the annual examination are complete and duly in order, he shall at his next visit to the school append his signature to the school record thereof, together with any comment that he may see fit to make thereon. The record so signed shall be the record of the annual examination, and shall be kept in the school in the manner herein prescribed.

(*b.*) The class registers, and the records of examination, together with copies of the Inspector's reports, shall be kept in the school for not less than ten years, and in the case of the closing of a school shall be delivered up to the Education Board to be kept for a similar period as the Board shall direct. The class-lists, signed by the Inspector, shall be kept in the Board's office.

(*c.*) The class-registers, records, and reports, shall be open at any reasonable time, except the ordinary school hours, to the inspection of the School Committee; but in general they shall in other respects be treated as confidential.

8. In order to satisfy himself of the general efficiency of the instruction given in the school, the Inspector shall at one or more of his visits devote a portion of his time to an investigation of the character of the teaching and of the degree to which the intelligence of the pupils has been developed,

and to this end may examine any of the pupils in any of the classes P to S7 in such subjects as he shall choose.

9. With a view to ascertain the individual progress of the pupils, the Inspector, where he considers it desirable, may hold an examination of any class in the school on the work done in the class during the current year or during the preceding twelve months. Such examination will be held by the Inspector after consultation, if circumstances permit, with the head teacher, and after consideration of any examinations which have been held during the preceding twelve months by the head teacher or the teacher of the class. As the result of such examination, the Inspector may, but only if the circumstances seem to call for such exceptional action, modify the classification of the head teacher by directing that any pupil or pupils shall be placed in any class or classes that he may name. Such modified classification shall thereupon for six months, or such shorter period as the Inspector may prescribe, be substituted for the classification of the head teacher. In such cases the effect of clauses 3 and 4 will be modified accordingly.

10. Every pupil examined in any subject by the Inspector shall be examined in the class in which he has been taught during the preceding three months; but the Inspector or the teacher may exclude from the examination of a class any pupil who has made less than half the possible number of half-day attendances at the school since the commencement of the current year.

Certificates of Transfer.

11. When a child leaves one school for another the head teacher shall furnish him with a "certificate of transfer," showing (1) his name and date of birth as given in the school Register of Admission; (2) the class or classes in which he is placed for English and arithmetic; (3) the number of half-day attendances he has made since the beginning of the current year; (4) the number of half-day attendances he has made since the date of his last promotion in English where that is different from (3): Provided always that any such transfer of attendance is in order under the Act and regulations.

In cases where a child previously attending a school presents himself for enrolment at another school, but is not provided with a certificate of transfer, the teacher of the latter school shall make application for such certificate to the teacher of the school previously attended.

The forwarding of the Scholar's Record Card (Medical Inspection, R3 or R7), shall be held to satisfy the requirements of this clause if the entries thereon are made up to the current date in so far as they relate to the class in which the child is placed, and to his attendance and progress.

Inspection Report.

12. The inspection report shall relate to such topics as the following: I. List of classes and teachers, showing the number of pupils in each class and the number present. II. The Inspector's opinion of the degree of discretion displayed in the grouping of the classes, in the classification of the pupils, in the determining of the promotions from class to class, and the organization of the school in other respects—*e.g.*, in regard to the average number of children present at any one time under the instruction of any teacher or pupil-teacher. III. Marking and keeping of registers. IV. Regularity of attendance. V. Suitability of time-tables. VI. Suitability of schemes of work, method and quality of the instruction in general or in detail. VII. Order and discipline, and the tone of the school with respect to diligence, alacrity, obedience, and honour. VIII. Supervision in recess and organization of school games. IX. Manners and general behaviour of the pupils. X. State of buildings, ground, and fences. XI. Sufficiency of school accommodation. XII. Cleanliness and tidiness of rooms and premises (including outside offices), condition and sufficiency of school material and apparatus, ventilation and warming. XIII. Class-books used in the school. XIV. Special circumstances affecting the work of the school. XV. Instruction given to pupil-teachers and probationers. XVI. Other topics.

13. The report shall be divided into sections, and the section relating to any topic in the foregoing list shall bear the number assigned to that topic in the list. Section I shall show what classes within the meaning of clause 2 of these regulations there are in the school, whether the classes are grouped for instruction, and, if so, how they are grouped, and by what teacher each class is taught, describing each teacher by the position held in the school as "sole teacher," "head teacher," "mistress," "first assistant," "third-year pupil-teacher," or as the case may be. Any section except sections I and VI may, if the Inspector so choose, be omitted or consist of the appropriate number and of a single word, such as "Satisfactory."

14. In expressing his opinion of the value of the work done in any subject, the Inspector shall consider whether the subject is taken by all the pupils in all the classes for which it is prescribed, and also whether it is efficiently treated.

Standard of Exemption.

15. The "standard of exemption" under section 150 of the Education Act, 1908, shall be the Sixth Standard, and the certificate referred to in paragraph (*e*) of section 150, subsection (1), of the said Act shall be a certificate of competency in the work of Standard VI.

Certificates of Proficiency and Competency.

16. (i.) A "certificate of proficiency" is a certificate of good attainment in subjects of the Sixth Standard. The standard of attainment for a certificate of proficiency shall be the same in all schools. No one shall receive a certificate of proficiency unless he—

(*a.*) Obtains at least 50 per cent. of the possible marks in English, at least 40 per cent. of the possible marks in arithmetic, and at least 60 per cent. of the possible aggregate marks in English and arithmetic; nor unless he

(*b.*) Has received sufficient instruction in the other subjects as prescribed by these regulations, and satisfies the Inspector that he has reached a satisfactory standard of attainment in at least three of the subjects—(1) Geography, (2) history and civics, (3) drawing, (4) elementary science, (5) handwork.

The relative values to be assigned to English and arithmetic shall be: English, 400; arithmetic, 200.

Merit Marks.—For each or any of not more than four of the subjects above enumerated—namely, (1) geography, (2) history and civics, (3) drawing, (4) elementary science, (5) handwork—a candidate may be awarded five merit marks, if the Inspector has satisfactory evidence that such candidate has shown merit or has done distinctly good work in the subject during the year, or ten merit marks if his work therein has been very good or excellent; and such marks (not exceeding 40 in all) may be added to his marks for English and arithmetic to make up the aggregate marks required in these subjects conjointly (60 per cent. of the possible aggregate marks) to satisfy the conditions of paragraph (*a*) above. No merit marks shall be awarded in any school in which the general standard of work in subjects other than English and arithmetic is not satisfactory.

(In this regulation "Handwork" means one or more of the following: Woodwork or ironwork, cardboard-work, cookery, laundry-work, advanced plain needlework, dressmaking; elementary agriculture and dairy-work are to be reckoned as "Elementary Science.")

A candidate who fails to gain a certificate of proficiency in the examination may be awarded a certificate of competency in Standard VI if he obtains an aggregate of not less than 40 per cent. of the possible total in English and arithmetic, provided that his marks do not fall below 40 per cent. of the total in English nor below 30 per cent. in arithmetic.

(ii.) A "certificate of competency" means a certificate that the holder has fulfilled the requirements of some standard of education prescribed by these regulations and named on such certificate, in (1) reading, (2) writing and spelling, (3) composition, (4) arithmetic, and has satisfied the Inspector that he has received sufficient instruction in the other subjects: Provided that the Inspector may accept work somewhat below the requirements of such standard in one, but not more than one, of the subjects (2) to (4).

(iii.) A person may be a candidate for a certificate of competency on one of the following grounds:—

(*a.*) That he is seeking employment in the public service or elsewhere;

(*b.*) That he wishes to enter a secondary school.

[NOTE.—Under (*a*) he must be a candidate for a certificate of competency in the Fourth, Fifth, or Sixth Standard, and under (*b*) he must be a candidate for a certificate of competency in Standard V.]

17. With regard to pupils and others who are candidates for certificates of proficiency or competency, the Inspector may determine the qualifications of the candidates in one or other of the following methods: (*a*) Accept, in whole or in part, the head teacher's report, or the results of the head teacher's examination, or the records of the school, as sufficient evidence that a candidate has reached the required standard of attainments; or (*b*) examine such candidates at the time of the visit of which notice has been given in accordance with clause 1, or at the time of any other visit; or (*c*) arrange to hold a central examination for all such candidates from places within a convenient radius, due notice of such examination being given (this examination is not to be regarded as a special examination within the meaning of clause 20); or (*d*) if these methods of determining the qualifications of a

candidate be found to be impracticable, the Inspector may accept, in whole or in part, the results of any other suitable examination held by the Education Department, an Education Board, or other recognized authority, as evidence of the pupil's fitness to receive a certificate of proficiency; and he shall give certificates of proficiency accordingly to all candidates that in his opinion qualify therefor in any of the four ways above mentioned.

18. Immediately on receipt of the notice of the Inspector's visit provided for in clause 1, the head teacher shall post for public information, in a conspicuous place on the school premises, a notice that such visit is about to be made, and shall call the attention of the children thereto. The parent of any child of school age, or on the roll of any school, who wishes such child to obtain a certificate of competency other than a certificate of competency in S6 must give notice of his desire in writing to the head teacher at least three days before such visit; this notice must state on which of the grounds named in clause 16 the parent wishes such certificate to be granted.

The Inspector may, if he see cause, refuse to examine for a certificate of competency any child on the roll of a public school who has not been instructed for at least six months in the work of the standard to which such certificate refers, or in the work of a higher standard; or any candidate who has failed to reach the required standard at an examination held by an Inspector during the previous three months; or any candidate in whose case he is not satisfied of the existence of one of the grounds named in clause 16 hereof.

Nothing in this regulation shall prevent the Inspector from accepting at any time the results of a head teacher's examination or the records of a school as sufficient evidence that a child has reached a certain standard of education, and giving his certificate accordingly, whether such child be still on the school roll or not.

The head teacher shall, on the day of the visit above referred to, hand to the Inspector lists in duplicate of those on behalf of whom notice has been given to him of the desire to obtain such certificates of competency. These lists shall be written on forms provided by the Department.

19. Any candidate for a certificate of proficiency or competency who is not of school age and is not on the roll of any school must give notice in the manner prescribed in clause 18 hereof.

Special and Central Examinations.

20. The Inspector may also hold special examinations of candidates, whether of school age or not, for certificates of competency or for certificates of proficiency at any place and time that may seem fit to him, and may require candidates for such special examinations to give fourteen days' notice of their intention to be examined.

By or on behalf of each candidate at such special examinations there shall be paid to the Inspector, or, if the Board shall so direct, to the Secretary of the Education Board, the following fees, namely: If there be only one candidate, £1; if there be two candidates, 10s. for each candidate; if there be three candidates, 6s. 8d. for each candidate; if there be four or more candidates, 5s. for each candidate. But no fee shall be payable in the case of any one examined at a school at the time of the Inspector's visit to such school.

Form of Certificates.

21. (i.) All certificates, whether of competency or of proficiency, shall be on forms issued by the Department, and shall be signed by an Inspector of Schools, or by the Secretary of the Education Department or of an Education Board in accordance with information furnished by an Inspector.

In the case of pupils attending the normal school attached to a recognized training college, such certificates may be signed by the Principal of the training college.

(ii.) No certificate of proficiency or of competency shall be issued except in accordance with the foregoing clauses 16 and 17 hereof.

22. The Inspectors of the several districts shall make an annual return, on a form provided by the Department, showing with respect to the public schools subject to their inspection the number of pupils in the several classes P to S7, and the number present at the time of the annual examination, as indicated in the class-sheets submitted to them under the provisions of clause 6. The return shall also include for each school the Inspectors' estimate (*a*) of the general character of the instruction given in the school, (*b*) of the order, discipline, and tone of the school, and (*c*) of its material condition, together with a notification of the number and character of certificates of Sixth Standard attainment issued to the pupils. The return shall be accompanied by a report on the public schools of the district, dealing, for the schools generally, with such of the topics named in clause 12 as it may seem expedient to include.

II.—SYLLABUS OF INSTRUCTION.

PREPARATORY DIVISION.

23. The subjects of instruction in the Preparatory Division shall be English, handwork (including drawing) and other manual occupations, singing, games and other suitable physical exercises, and arithmetic.

In English the chief object shall be the teaching of the spoken language, as by simple stories, and by conversations founded upon the children's own observation of simple objects and phenomena and of pictures. The children should be led to express themselves freely and naturally, not only by the reproduction of stories told to them and by answers to questions, but spontaneously as suggested by their own natural activities and imagination. Opportunity may be taken to inculcate very elementary ideas of morality and of health, the former through stories having a moral purpose (the moral need not be expressed), the latter by simple talks—*e.g.*, upon the use of a tooth-brush. Special effort should be made at this stage to secure purity of speech in regard to clear articulation, and as far as possible to purity of vowel sounds and to the correct use of the vocal organs; but this should be based upon imitation mainly. It is important, therefore, that teachers should themselves adopt a natural style of speaking, and should set good examples of clearness and purity of speech. The formal teaching of reading and writing is less important at this stage, and perhaps at any stage, than the teaching of spoken English; in Class P1 the teaching of these subjects will for the most part be incidental to the lessons in speech, the reading being chiefly from the blackboard or wall-board or from reading-sheets, the writing being in chalk or pencil on wall-boards or paper; no lessons in spelling need be given except such as are involved in simple phonetic word-building, in copying the teachers' script, or in building words with movable letters. In P2 the teaching of reading and writing will be more systematic, but pen and ink should not be used, nor should rigid accuracy of form be insisted upon, so long as reasonable neatness and legibility are secured; spelling should be taught mainly by the copying of sentences in script. In both classes the recitation of suitable poetry should form a feature in the work.

As the work in English will be based upon the child's attempts at self-expression in language, and upon his observation and imagination, so the handwork, drawing, and other occupations, and the physical games and exercises, will be directed to the development of the child through his other activities; the narration of what he has been doing in his games and occupations will also afford fresh occasion for exercise in speech. The methods of the so-called "new kindergarten," which include modelling, and drawing, and simple dramatic games, should be employed as far as the staffing will permit; and the importance of singing and other music for its own sake, as well as for voice-training and for the training it gives in rhythm and in rhythmic movements, should not be overlooked. The physical exercises should conform to the general scheme as set forth in the Regulations for Physical Training; they should in all cases include simple breathing exercises, but otherwise suitable games are of more importance at this stage than merely formal drill.

The teaching of arithmetic in the Preparatory Division should be largely incidental, especially in P1, to the occupations and games. In P2 the composition of the numbers up to 20 should be known, and the children should be taught to perform mentally and orally every kind of operation with these numbers that is within the mental powers of children of their age and development, and similarly to apply the power thus acquired to concrete examples.

The aim of the instruction in handwork and drawing at this stage should be to awaken and develop the faculty of observation, to train children to use hands and eyes in harmony, freely and correctly at will, and express graphically in suitable media the appearance (form and colour) of easily understood objects. Incidentally, the work should lead up to the work of the Junior Division. The exercises should include the representation of very simple familiar objects, both natural and fashioned, in mass and on a large scale, with coloured crayons and chalk; the free expression through illustrative and imaginative drawing of ideas formed in other lessons, particularly in nature lessons; modelling in clay or plasticine, and other forms of hand and eye training founded on sound educational principles; elementary pattern-making; drawing lines of given length with rulers. Outline should be taught through mass, and the brush and pencil should not be introduced until reasonable skill in handling crayons and chalk has been acquired by the pupils. Small objects are in general to be avoided. See also clause 31.

For the program recommended in singing and the general principles to be observed in the course, teachers are referred to clause 37 and the Appendix.

JUNIOR DIVISION.

24. The following shall be the subjects of instruction as defined below in the Junior Division in all schools: (1) English, (2) arithmetic, (3) drawing and handwork, (4) nature-study, (5) moral instruction and health, (6) singing, (7) physical exercises.

Needlework shall also be taken where possible by all girls of the Junior Division, and may be taken by boys.

(1.) *English.*

Reading.—Two or more books, of which one may be the *School Journal* and one at least shall be a continuous reader. Where the Junior Division is subdivided into two classes, S1 and S2, at least one of the readers used in S2 shall contain more difficult matter than is required in S1.

Composition.—Answering orally questions upon the most striking parts of the subject-matter of the reading-lesson, and upon such common objects and occurrences as would be observed by children of seven to nine years of age at home, at school, on the way from home to school, or elsewhere; the oral reproduction of easy stories told by the teacher, and the giving of continuous simple accounts or descriptions of common objects or occurrences referred to above. Easy "observation-talks," and "picture-talks," and conversations on various places and people, the map or globe being used to show the position of places. Purity of speech as to form and as to sound should be encouraged, and common errors corrected as they occur. In S2 there may be written composition, consisting of easy sentences upon simple subjects already dealt with in oral composition, and upon other familiar subjects, and of the completion of sentences given in an incomplete form.

Writing.—Transcription of short easy sentences, beginning with a capital, from script or (in S2) from print. Writing with a pen need not be required, nor should precise accuracy of form be insisted upon so long as neatness and legibility are secured.

Spelling.—Based chiefly on word-building, but including also other words in common use. The word-building should consist of such combinations of consonant and vowel sounds as are most commonly represented in words of one syllable, and in easy words of two or three syllables, and of simple derivatives therefrom. The sound-values of the various letters should be taught, but formal drill in phonetics, if used at all, should be used only sparingly.

Recitation.—Not less than 120 lines of suitable standard poetry, a syllabus of the work done being given to the Inspector.

(2.) *Arithmetic.*

First Year (S1).—The numbers from 1 to 100. Each number should be taught by concrete examples, and the composition and grouping should be taught in similar fashion. Application of the same numbers to very easy examples, including shillings and pence, and yards, feet, and inches, which should be taught by actual measurements made by the children themselves. The main part of the work is to be mental and oral; the written work is to be subordinated to this.

Second Year (S2).—Extension of the work of S1 to the numbers up to 1,000. The four simple rules, multipliers and divisors being confined to the numbers 1 to 12 and 20, and no numbers greater than 1,000 to be required. The pupils should understand the meaning of $\frac{1}{2}$, $\frac{1}{3}$, ... $\frac{1}{12}$, $\frac{1}{20}$, applied to easy concrete examples. Compound rules (money), multipliers and divisors not to exceed 12, and no work to be required that cannot be done mentally or orally by average children at this stage.

(3.) *Drawing and Handwork.*

It is recommended that the instruction in drawing and handwork should be on the following lines, but any suitable program will be accepted if it provides for sufficient instruction in free drawing, in the use of simple drawing-instruments, and in the knowledge of colour.

Free drawing (including, if practicable, free-arm drawing) with coloured crayons, chalk, brush, or pencil, in mass and in outline, of familiar natural and fashioned objects containing simple curved or straight lines, or both. (For examples see clause 31.) Illustrative and imaginative drawing. Elementary practice with ruler and set-squares in drawing straight lines and angles, and in setting out to given dimensions, squares, rectangles, and triangles (set-square angles), and simple combinations of these figures; and

in making very simple border-patterns based thereon. Colouring outline drawings and border-patterns with chalk or with brush. Manual occupations affording opportunities for the elementary study of form (*e.g.*, modelling), and for elementary exercises with ruler and set-squares (*e.g.*, paper-work).

(4.) *Nature-study.*

In schools with more than one teacher the scheme of work in this division must include a definite set of lessons in nature-study; in smaller schools the "observation talks" (which must, however, be based on the actual observation of the children) may suffice for this requirement.

In the second year (S2) the nature-study should include elementary geographical notions from actual observation, and the drawing of very simple plans of the class-room or school and of the playground.

(5.) *Moral Instruction and Health.*

The requirements under this head will be held to be satisfied if suitable stories and fables are treated as the matter of conversation in the English lessons. A few very simple topics coming under the head of health may be similarly treated, especially those relating to personal cleanliness, the care and use of the teeth, &c.

(6.) *Singing.*

As set out in clause 37 below and the Appendix.

(7.) *Physical Exercises.*

Suitable games and exercises, in accordance with the Regulations for Physical Training.

SENIOR DIVISION.

25. The following shall be the subjects of instruction in all schools for the Senior Division: (1.) English, (2) arithmetic, (3) drawing and handwork, (4) nature-study and elementary science, (5) geography, (6) history and civics, (7) moral instruction and health, (8) singing, (9) needlework (for girls), (10) physical exercises.

Needlework must also be taken by all girls of the Senior Division in every school where there is a female adult teacher, provided that girls who are attending a class in cookery, dressmaking, or laundry-work recognized under the Regulations for Manual and Technical Instruction need not take needlework while they are so attending; provided further that girls who take needlework and one of the last-named subjects in connexion with an approved course in home science shall not at the same time be required to take any other elementary science.

(1.) *English.*

(*a.*) *Speech.*—The oral work of the lower divisions is to be extended and continued, and increasing attention is to be paid to purity of speech in regard to sound and form. More definite teaching in the sound-values of the letters shall be given, and correct pronunciation, especially of the open vowel sounds, should be insisted on.

(*b.*) *Reading.*—Three or more books, of which one may be the *School Journal*, one may be a book of standard selections in poetry and prose, and one at least shall be a continuous reader, to be read fluently and intelligently. In all cases the books read by the pupils of the third and fourth years (S5 and S6) shall be of greater difficulty than those used by pupils of the first and second years (S3 and S4). Where there are separate teachers for S3 and S4, at least one of the books used in S4 shall be of greater difficulty than the corresponding book used in S3; and similarly for S5 and S6.

Silent reading should form part of the work, especially in S5 and S6, at the discretion of the teacher.

(*c.*) *Composition.*—Oral and written composition, progressively more advanced than before. The composition should include the reproduction in the children's own language, orally and in writing, of the matter contained in the poetry or prose learnt for recitation, and in other easy literary pieces, and of the subject-matter of the silent reading (paraphrase is not to be attempted), letter-writing, and, in S6, the writing of simple business letters. In S5 and S6 special regard should be given to the practical aim of securing good arrangement, brevity, clearness, and force in composition. In all exercises of written composition suitable attention must be given to punctuation.

(i.) S3 and S4 (two years): Analysis into subject and predicate, synthesis to correspond, and variation of the form of very easy sentences; the

recognition of nouns, pronouns, verbs, and of adjectives, adverbs, and of equivalent phrases by their functions in easy sentences. Correction of common errors of the spoken and the written language corresponding to this stage. Technical terms are to be used very sparingly.

(ii.) S5 and S6 (two years): Analysis of a general character, synthesis, and variation in the form of easy sentences. The recognition of the parts of speech and of equivalent phrases and clauses by their functions in easy sentences. The distinction between singular and plural, masculine and feminine, first, second, and third persons, past and present, present and future, active and passive, to be taught by their use in sentences. (Definitions are not to be required, nor, in general, abstract rules of grammar.) Further practice in the correction of errors corresponding to the above work.

(*d.*) *Writing.*—First and second years (S3 and S4): Systematic instruction in the formation of letters and junctions, and of figures. Transcription of easy poetry or prose, including the use of the full stop, the comma, the notes of interrogation and exclamation, and the use of inverted commas.

Third and fourth years (S5 and S6): Systematic instruction with the aim of securing legible, neat, fluent, and ultimately rapid writing, with due regard to the junctions of letters and to spacing. More difficult transcription, including invoices and other commercial forms in common use, and easy tabulated matter; filling up printed forms.

(*e.*) *Spelling.*—Word-building continued, with special reference in S5 and S6 to the force of the commonest prefixes and affixes. Common homonyms.

(*f.*) *Recitation.*—150 to 200 lines of suitable standard poetry or prose.

(2.) *Arithmetic.*

Especial emphasis is to be laid on the importance of the oral and mental work. Where the Upper Division is divided into four classes (S3, S4, S5, and S6), with separate teachers, the work may be arranged as below; but, in other cases, if the ground indicated is covered in the four years spent by the average child in the Senior Division, any convenient grouping may be allowed.

(*a.*) *First Year (S3).*—The general analysis of numbers up to 1,000,000; notation and numeration of these numbers. The simple rules and their application to easy concrete examples of a familiar and practical character: the relative values of the mile, chain, yard, foot, and inch; of hours and minutes; of the day, week, and year; of the ton, hundredweight, pound, and ounce, and of the quarter and stone, to be known and applied to easy exercises, but no sum requiring a knowledge of measures of length, time, or weight to involve the use of more than two denominations. The compound rules as applied to money sums; multipliers and divisors in money sums not to exceed 99; multipliers, if over 12, to be reducible to factors not over 12; sums of money in the questions and answers not to exceed £1,000.

(*b.*) *Second Year (S4).*—The simple and compound rules applied to easy concrete examples relating to money, and to the following weights and measures: avoirdupois weight, long measure (excluding poles or perches), square measure (excluding square poles or perches and roods), capacity (pint, quart, gallon, bushel, quarter), time. The methods of practice may be used in multiplication, but complicated examples thereon should not be set. Mensuration—to find the area of a square and of a rectangle with given sides, expressed in one denomination only (as in inches, or feet, or yards, but not in feet and inches, &c.). The meaning of proper fractions, with denominator not greater than 20, and of 0·1, 0·2, 0·3, and so on up to 0·9, to be known as applied to concrete examples in a simple manner. Easy tradesmen's bills. Mental arithmetic and problems adapted to this stage of progress.

(*c.*) *Third Year (S5).*—The meaning of 0·01, 0·02, &c., of 0·11, 0·12, ... 0·99, and of 0·001, 0·002, &c., to be known and applied to concrete examples in a simple manner; easy sums involving the expression of money and common weights and measures in decimal forms and the converse; multipliers and divisors in all cases to be integers. Very easy cases of vulgar fractions (excluding complex fractions).

Mensuration of walls and floors, and other simple rectangular areas, as far as possible from actual measurements. The rood and the square pole to be known as fractional parts of the acre. The relative values of the cubic foot and cubic inch and of the cubic yard and cubic foot—to be demonstrated by models. Relative values of the kilometer, meter, decimeter, centimeter, and approximate equivalents in yards and inches. Easy examples on the foregoing.

The solving of easy practical problems by the unitary rule, by practice, and by other methods based on first principles. Bills of accounts, and discount thereon.

(*d.*) *Fourth Year (S6).*—Vulgar and decimal fractions (excluding complicated expressions and sums in recurring decimals); percentages applied to simple examples, including easy direct cases of interest, profit and loss, commission and tradesmen's discount (banker's discount, true discount, and inverse questions in percentages are excluded). The following terms in the metric weights and measures, concretely illustrated and applied to very simple examples—(*a*) kilometer, meter, decimeter, centimeter, millimeter; (*b*) kilogram, gram; (*c*) liter (cubic decimeter). Square root; easy mensuration of plane surfaces and of solids bounded by planes and of the cylinder. Suitable mental arithmetic; shorter methods of working sums in lower classes generally.

The knowledge of the work of any class in English and in arithmetic shall be deemed to presuppose a knowledge of the work of any lower class in the same subject.

(3.) *Drawing and Handwork.*

(i.) Drawing: It is recommended that, where the Senior Division is divided into two, three, or four separate classes, the instruction in drawing should include such work as that described below, any suitable program on these lines being accepted; but in any other case a smaller program may be drawn up, provided that sufficient instruction is given in free drawing from actual objects, in the use of simple drawing-instruments, and in the knowledge of colour.

First Two Years.—The representation with chalk, pencil, or brush of simple natural and fashioned objects (for examples see clause 31), also of simple flat ornamental shapes cut out on a large scale in cardboard, &c., and, in S4, of circular shapes unforeshortened and then foreshortened. Memory and imaginative drawing.

The construction to given dimensions of rectilinear figures of three, four, six, and eight sides, and of circles and parts of circles. Drawing to scale in plan and elevation very simple straight-lined objects.

Elementary practice in pattern-making (with known forms as units) illustrating the principle of symmetry, and (with brush and colour) in mass filling, direct representation, without outline, of simple shapes, and colour-matching.

The instruction in drawing should be associated with suitable instruction in handwork; the free drawing with modelling in plasticine or clay, and the instrumental drawing with brick-laying, paper-work, cardboard-work, or light woodwork.

S5 and S6.—The instruction in drawing should include—The representation with chalk, pencil, or brush of simple natural and fashioned objects (for examples see clause 31), of flat shapes cut out on a large scale in cards board, &c.; also of foreshortened rectilinear shapes leading up to the pictorial representation of simple objects. Memory drawing. The free drawing should be associated, if practicable, with modelling in plasticine or clay.

Drawing to scale in plan and elevation, from the pupils' own direct measurements, simple objects based on the cube and prism and on simple combinations of these; practical exercises involving the careful setting-out of lines and angles; use of protractor. The instrumental drawing should, in the absence of facilities for instruction in woodwork, be associated with constructive work in cardboard or some other suitable medium.

Elementary design and colour work. Only units derived from forms known to the pupils are to be employed.

(ii.) Handwork: One of the following — Woodwork, work in iron, elementary agriculture, dairy-work, cookery, and practical home science (girls).

NOTE.—(i.) In exceptional cases of schools where provision for one of the subjects of handwork specified in (ii) above is not found practicable, a suitable extension of the handwork subjects prescribed for S3 and S4 may be made, in association with a further development of drawing. (ii.) Any of the above subjects may be taken by S4 pupils as their handwork subject in schools where classes including such pupils would be recognized under the Regulations for Manual and Technical Instruction. (iii.) In the case of girls, needlework, if taken in conjunction with a satisfactory course of practical home science, shall be held to satisfy the requirements of handwork.

(4.) *Nature-study and Elementary Science.*

A graduated course for the four years should be drawn up from the topics suggested under these heads in the Appendix; but any suitable program may be accepted by the Inspector. In country schools work preliminary

to the study of agriculture is most suitable, and in all schools girls must receive some training in elementary home science. The lessons in physical geography and in health may be conveniently linked with other portions of science, and, indeed, may form part of the same program. In schools with one teacher a less ambitious program may be accepted, provided the observing and reasoning powers of the children are duly trained.

(5.) *Geography.*

A program of work for the four years should be drawn up to include such topics as the following, which are more fully set out in the Appendix; but any suitable program may be accepted by the Inspector if it is on the lines indicated.

First Two Years (S3 and S4).—Elementary geographical notions; length of shadows at noon; cardinal points; phases of the moon; high tide and low tide (for schools near the sea); clouds; parts of a river, water- and river-action (treated simply). Simple plans from observation and measurement; simple models in clay, plasticine, or wet sand. The height of the sun at noon at various times of the year. Shape of the earth; apparent daily movement from east to west of the sun, moon, and stars. Map-reading applied to the map of New Zealand, especially the position of the chief mountain-ranges, river-valleys, and plains. The position of the chief towns in New Zealand, the Australian States, and their capitals; the great dominions of the British Empire; the chief races of people and their characteristic industries or occupations; the continents and great oceans. All these things should be taught not as isolated facts, but by picture and story, so as to lead the children, consciously or unconsciously, to the recognition of certain elementary principles within their comprehension connecting physical geography with the facts of human life as known to them.

Third and Fourth Years (S5 and S6).—Revision, continuation, and extension of the work of the first two years: scales of maps, and distances and areas calculated (roughly) therefrom; glaciers and the work of ice; the sea and its work; winds and currents (treated in an elementary way); coasts, rocky and otherwise; general distribution of land and water; rudimentary notions of climate. Daily rotation of earth, meridians, local time at a few important places, longitude and latitude; annual revolution of earth round the sun; approximate form of the earth; the altitude of the sun at the equinoxes and at the solstices; the inclination of the earth's axis to its orbit; the length of the day; the zones of the earth; the seasons; trade-winds, monsoons; vegetable life at different seasons and in different zones. Typical animal life in different parts of the earth. Races and their migrations. Great travellers and geographical discoveries. The chief trade-routes of the world.

Natural productions of New Zealand, Australia, and other important parts of the Empire. Geographical causes of the rise and importance of the British Empire, its extent, and the position of the most important places in it. Similar knowledge (but with fewer details) of the chief countries of Europe and America, and of China and Japan.

(6.) *History and Civics.*

A program should be drawn up for the four years, the topics being selected from those set out in clause 34 below, but any similar program may, if suitable, be accepted by the Inspector. There should from time to time be a presentment in some suitable form of the chronological sequence of the historical incidents treated.

In schools where there is one teacher for S3 and S4, and another for S5 and S6, it is recommended that the program of work for the first two years shall cover, in a very elementary manner, the whole ground from the earliest times to the present day; and that the program for S5 and S6 shall cover the same ground, the same topics being treated in a more advanced manner, and fresh topics being introduced.

In the teaching of history and civics the practical aim of the making of good citizens is to be kept constantly in view.

The instruction in civics should have a close connexion with some of the moral instruction.

(7.) *Moral Instruction and Health;* (10.) *Physical Exercises.*

These subjects are to be treated as indicated in the "Further Directions" following, clauses 35, 36, and 39.

(8.) *Singing;* (9.) *Needlework.*

The general directions to be observed in the courses are set out in clauses 37 and 38 below. A written program of the work in the Senior

Division is to be presented to the Inspector. Suggested programs are given in the Appendix.

CLASS S7.

Schools other than District High Schools.

26. In places where there is a secondary school coming under section 10 of the Education Amendment Act, 1908, or a district high school, or a day technical school, and in places from which the pupils can travel daily to such a school, the work in S7 shall not be required. Subject to the foregoing conditions, the following shall be the subjects of instruction for class S7 in all public schools other than district high schools: (1) English; (2) arithmetic; (3) civics; (4) moral instruction; (5) physical training; together with (6) one or more of the other subjects prescribed in clause 6 of the Regulations for Free Places in Secondary Schools and District High Schools: Provided that no language other than English shall be taken in any school unless such school is a normal school or is situated more than five miles from any secondary school coming under section 10 of the Education Amendment Act, 1908, or from any district high school.

(1.) *English.*—More advanced work than in S6, including the study of one or more of the works of some standard author or authors—not less than eight hundred lines of poetry or two hundred pages of prose in the year, or an equivalent in poetry and prose. Essays and other composition exercises, including the reproduction, in *précis* form, of literary and other matter; very elementary commercial correspondence. Further exercises in the principles of composition, including the analysis and synthesis of sentences.

(2.) *Arithmetic.*—(*a.*) Other (indirect) cases of interest and profit and loss, and generally harder cases of sums required in S5 and S6. Compound interest; simple cases of exchange; banker's discount. Practice in shorter methods generally. Mensuration of the prism, the cylinder, sphere, pyramid, cone; simple cases to be demonstrated experimentally, and, as far as possible, by the pupils individually.

(*b.*) Making out a simple balance-sheet, an easy cash account, a statement of receipts and expenditure, and a personal account, as in retail trade. The meaning of a simple balance-sheet and of ordinary commercial terms, such as "assets," "liabilities," "solvent," "insolvent," "creditor," "debtor," "profit" and "loss," "cheques," "bills and promissory notes," "debit" or "credit" balance. Working of sums arising therefrom.

(3.) *Civics.*—The rights and duties of the citizen and their historical foundation.

(4.) and (5.) *Moral and Physical Instruction.*—As indicated in the "Further Directions" following.

District High Schools.

27. In the secondary department (or class S7) of district high schools the course of instruction shall be an approved rural course as defined by the Regulations for Manual and Technical Instruction, or shall be a course in accordance with the provisions of clause 6 of the Regulations for Free Places in Secondary Schools and District High Schools.

III.—FURTHER DIRECTIONS AND GENERAL AIMS IN SUBJECTS OF INSTRUCTION.

28. It is to be regarded as important that the program of instruction in any school shall be drawn up with a due regard to the principle of co-ordination, so that the various portions of the work shall be regarded not so much as separate subjects, but as parts of a whole linked together firmly by immediate reference to the facts and needs of the children's daily life.

Accordingly, the requirements of the syllabus are not to be interpreted too rigidly, but for the several classes in various kinds of schools are to be adapted to the children in those classes, to the circumstances of the district, to the staff of the school, &c. In the lower classes of all schools the drawing would be combined with the handwork, if the latter were taken; geography, if taken, would form part of the course of nature-study. In the upper classes one course of lessons might meet the more definite of the requirements for physical geography, nature-study, health, and elementary science, and this course might even be connected with a handwork course, such as cottage-gardening.

It will be the duty of the Inspector to advise the teacher in regard to the program of work in all subjects, or in any subject, and, if it is in his opinion necessary or desirable, to assist the teacher in drawing up such program or programs.

It will be the duty of the Education Department to publish from time to time suggestions for programs of work in schools of various kinds; and

such programs, if approved by the Minister of Education, and published in the *New Zealand Gazette*, shall be held to satisfy the requirements of the portion of the syllabus to which they refer.

ENGLISH.

29. *Speech.*—It should be recognized that the foundation of all work in English is natural and correct speech. Children should be taught to reproduce in oral speech simple stories told by the teacher, and to give orally simple accounts or descriptions of common objects and occurrences that fall within their experience. These should be expressed in complete sentences properly grouped, and clearly and correctly pronounced. Simple conversations and talks in which both the teacher and the children take part, upon subjects of everyday life, but calculated to extend the interests of the children by arousing their observation and other activities, should be largely employed in the lower classes. It is not essential that the answers should contain complete sentences, but the answers should be as complete and clear as they would be in the natural conversation of educated people, and slovenly answering should not be passed over at any stage. Any attempt to make children speak in a stilted manner, or to use words and forms unfamiliar to them should be avoided; the speech should be natural, and errors should be corrected as they occur. The practice in oral composition should be continued throughout the whole school course, and should not be confined to the English class-work only; the children should regularly be trained to give orally a simple and clear account of anything that they have learnt in history or geography, of any experiment or observation made in science, or of any process used in their handwork.

The chief objects of the instruction in reading shall be to impart to the pupils the power of fluent reading, with clear enunciation, correct pronunciation, tone, and inflexion, and expression based upon intelligent comprehension of the subject-matter; to cultivate a taste for and an appreciation of good literature; and accordingly to lead the pupils to form the habit of reading good books. The reading of such books might, indeed, well replace all other kind of home-work. There should be at least two or three reading-books in each class. The requirements in reading shall be held to be met by the use of the *School Journal*, together with continuous readers suited to each stage. Silent reading should be largely employed in the case of children in the upper classes, and some of the composition should be based thereon. Generally, the instruction in reading must be such as to secure within the limits of the pupils' ordinary school course the ability to read at sight with ease and intelligence any reading-matter suited to the age and mental development of children completing the primary stage of their education.

Poetry set for recitation should, while suited to the age of the pupils, be chosen for its literary merit as well as for the interest it arouses. There is such a wealth of simple and beautiful poetry in English literature that there is no reason to select for repetition verse that is not worth the trouble of learning by heart. One of the objects in making children learn verse or prose by heart is that they may have stored up in their memory masterpieces that may develop their imagination, and may, whether the children themselves are conscious of the operation or not, mould their taste for good literature. A sufficient amount of poetry and prose, suitable for learning by heart, will be provided in the *School Journal*.

The children should have an intelligent comprehension of the poetry set for recitation, and be able to answer questions upon the subject-matter of it. In some classes the pupils might be trained to reproduce in their own words the substance of poetry previously committed to memory. These exercises link the recitation to the composition lessons.

Spelling should be taught by means of systematic lessons on word-building, based on a general phonetic scheme, or on the meanings of the words, or on both principles combined. This teaching should be regularly supplemented by transcription from script and print. Dictation is a useful test, but not in itself, it should be remembered, a method of teaching spelling. Indeed, the spelling may be judged rather from the composition and other written work than from special tests. The learning by heart of lists of spellings and meanings cannot be considered as serving any useful purpose, but children may be encouraged to bring to school lists of words and phrases that they have been unable to understand in the books read at home.

Any spelling shall be allowed that is recognized by the Oxford English Dictionary, and *ceteris paribus*, it is recommended generally that where this authority gives a choice the more phonetic form should be preferred; *e.g.*, recognize, rime, gram, kilogram, program, honor, labor, plow, jail, and not recognise, rhyme, gramme, kilogramme, programme, honour, labour, plough, gaol.

The object of instruction in *composition* shall be to train the children in the correct and ready use of their mother-tongue, both in speech and in writing. Although in the definition of the work for the several standards many grammatical terms are introduced, these terms are used for the guidance of teachers, and it is not intended that any grammar shall be introduced into the course of primary instruction except for the practical end above mentioned. Technical grammatical terms should be used very sparingly indeed, and the order of instruction should be, first, from example to rule, and then from rule to example; in other words, by induction first, then by deduction. Every lesson, in short, should be a composition lesson, no lesson merely a grammar lesson. Correct speech and composition depend more on practice and habit than on a knowledge of rules of grammar and composition. The art of speaking and writing correctly is acquired by familiarity with good models, and by practice subject to criticism and correction; and, with respect to the acquisition of the art, the function of grammar is the subordinate function of criticism.

ARITHMETIC.

30. Ability to apply number to everyday problems is requisite for efficiency in any position of life. It is very important, therefore, that the teaching of arithmetic should be planned to strengthen this ability, and should be associated with matters familiar to the children. To a large extent the teaching should be concerned with elementary notions of form, size, and weight rather than with abstract number; in other words, it is concrete and applied arithmetic which has to be taught. If the practical and utilitarian aspects of arithmetic are constantly kept in view, it will be a much more effective instrument for developing and disciplining the intelligence of the pupils than if it is taught merely in an abstract manner. In the teaching every "rule" should in the first instance be presented in a concrete form; practical exercises in counting, measuring, and weighing should be performed by the children themselves, and the heuristic method or the method of discovery should be largely used. Cardboard coins may be freely used when money sums are first introduced. In the highest classes the practical work should be associated with mensuration, with drawing to scale, and, as far as possible, with handwork: at the same time, where appropriate, the use of graphs and graphical methods should be encouraged.

Although the pupils should know before they leave school that 1 rood = $\frac{1}{4}$ acre, and 1 square pole = $\frac{1}{40}$ rood (as these measures are used in describing the area of land), yet the reduction of square yards to poles or *vice versa* need not be taught—the time can be much more usefully employed. The meaning of decimal fractions should be introduced gradually—at first, 0·1, 0·2, 0·3, &c., of a pound sterling, of a meter, of a ton, of a mile, &c., may be known respectively as 1 florin, 2 florins, 3 florins, &c.; as 1 decimeter, 2 decimeters, 3 decimeters, &c.; as 2 cwt., 4 cwt., 6 cwt., &c.; as 8 chains, 16 chains, 24 chains, &c.: then 0·01, 0·02. . . . 0·99 may easily be taught by division of the meter into centimeters, and in like manner suitable concrete examples may be taken for 0·001, &c. The reduction at sight of decimals of a pound to shillings and pence, and *vice versa*, will enable the pupils to appreciate rapidly the meaning of decimals; and one of the chief uses of the metric units will be to afford easy concrete examples of decimal fractions.

The following figures will give sufficiently near approximations for the equivalents in English measures of the metric standards: 1 kilometer = 1,100 yd., 1 meter = 40 in., 1 decimeter = 4 in., 1 centimeter = $\frac{2}{5}$ in. or 0·4 in.; 1 kilogram (kilo) = 2·2 lb., 1 gram = 0·035 oz., or 1 ounce = 28 grams; 1 liter = $1\frac{3}{4}$ pints. In S6 algebraic and graphic methods may be used where the solution is thereby made shorter or easier. (By the suggestion that algebraic methods may be used it is not intended that a course in algebra should be attempted, but that the use of algebraic symbols—*e.g.*, the use of x instead of long verbal phrases and the expression of an arithmetical statement in the form of a simple equation—may often make a question easier both to understand and to solve.)

At all stages in the elementary school the "mental" and oral work should, as far as the staffing and the circumstances of the school permit, predominate over the written "sums," the written work being designed mainly to teach the child to express clearly the several steps in his calculations, and thus to lead to clear thinking, and also at the latter stages to enable him to solve questions involving somewhat higher numbers than the ordinary child can manage without the aid of paper. There is, however, no reason why in all the classes of the Junior and Senior Divisions children should not be required to write down the answers to the sums done "mentally," and at all stages to write down as "tables" the facts they have learnt from

their practical work in counting and measuring. No question should be set in any class that could not arise in actual everyday life, or that is far removed from the experience of the child.

Accuracy in arithmetical calculations is, of course, of prime importance in the practical affairs of life, and quickness comes next; there is no royal road for acquiring accuracy and quickness: the real secret of both is to be found in constant practice in the use of numbers within the comprehension of the child, applied to questions on such matters as might arise in actual everyday life. As every teacher is aware, there is no known substitute for this constant practice.

Drawing and Handwork.

31. The instruction in drawing should be directed to the cultivation of the pupil's power of graphic expression. Since complete graphic expression calls for careful observation, critical judgment, and some degree of manual dexterity, it should be the aim of the teacher to lead the pupils through practice and experience to observe accurately, and to record as faithfully and as truly as possible the results of their observations. To this end the instruction should from the first be correlated as far as practicable with other subjects of the school course, and with modelling in clay or plasticine and other forms of educational handwork. No explanation of any real form should be considered thoroughly satisfactory unless accompanied by an intelligent drawing. In other words, drawing is to be regarded as a means of assisting expression in the child's daily life and study, and should for this purpose be taught as a language rather than a an art. At the same time every effort should be made—*e.g.*, in connexion with nature-study—to arouse in children an appreciation and love of beauty in form and colour

With a view to stimulate and cultivate the inventive and imaginative powers, the pupils, especially in the lower classes, should be encouraged to illustrate stories and incidents with which they are familar, to make sketches of things in which they are interested, and to make drawings from their own imagination.

In all classes free drawing is to be practised. The pupils' drawings, whether on wall or desk boards, on brown, tinted, or white paper, whether carried out in coloured crayons, chalk, pencil, or water colour, whether in mass or outline, light and shade or colour, should be direct representations of natural and fashioned objects. Since nothing should be allowed to come between the pupil and what he is representing, diagrams and copies either drawn or printed should be used but sparingly, and wherever practicable avoided altogether. The pupil's record of what he sees should be the result of his own impressions, not those of some one else. Blackboard sketches and drawings by the teacher should be confined to illustrations of methods and principles, and should not take the form of diagrams to be copied or to show pupils what they ought to see. The use of the slate and slate-pencil for exercises in drawing should be discouraged. The brush should be regarded from the first as a drawing-instrument. Brush drawing should not be treated as a thing apart from the ordinary drawing-lesson. The representation with the brush of meaningless forms should be avoided.

The objects for representation should be selected with due regard to the end in view and to the capacities of the pupils. Throughout the course the principle of proceeding from the greater to the smaller, and from the simple to the complex, should ever be borne in mind. The selection made must include both natural and fashioned objects in about equal proportions. In the selection of natural objects a seasonal or some other rational order should be followed with the view of arousing and sustaining the pupils' interest. In the selection of fashioned objects preference should be given to those that are simple, interesting, within the experience of the children, and fashioned for some actual purpose in life apart from the drawing-lesson.

The following, among others, may be regarded as suitable objects for study in the Junior and Senior Divisions respectively:—

Junior Division.—Coloured beads or buttons (in groups), skipping-rope, hoop, wooden spoon, gridiron, wire netting, envelope, slate, kite, knife, axe, football, toy flags, toy animals, ninepin, bow and arrow, horse-shoe, carrot, plum, apple, unserrated leaves, pansy, daffodil.

Senior Division.—S3 and S4: Picture and photo frames, toasting-fork, fan, croquet-mallet, spade, broom, cricket-bat, tennis-racquet, school-bag, tambourine, basin, wood-shaving, clock-spring, bag of sugar, lantern, serrated and subdivided leaves, spray of three or four leaves, twigs and small boughs, buds, blossoms, berries, fruits, feathers, shells, butterflies, fish.

S5 and S6: Bottle and vase forms, school bell, paper scroll, boot, hat, linen cuff, flower-pot, toy yacht, brief-bag, Indian club, Japanese umbrella, dorothy bag, draped shawl or curtain, doll, woodwork and garden tools,

kitchen utensils, simple science apparatus, feathers, insects, fish and other animal forms, shells, fern and palm leaves, grasses and rushes, celery and rhubarb sticks, fruits and vegetables generally.

The course in drawing should provide for some elementary practice in colour-discrimination, colour-matching, and colour-harmony.

With the view of providing further opportunities for the cultivation of taste in form and colour, and of enabling pupils to gain an elementary knowledge of the laws of arrangement, simple exercises in space-filling and the formation of patterns should find a place in the course of drawing for each standard. Exercises in elementary design, which may be regarded as affording opportunities for the application by the pupil of his knowledge of form and colour to decorative purposes, should be worked in conjunction with the exercises in free drawing. Pupils, indeed, should be taught to regard each exercise in drawing as an exercise in composition and space-filling. Some attention should be given to lettering, especially block and Roman lettering.

Opportunities for suitable practice, adapted to the capacitie of the pupils, in the manipulation and use of rulers, set-squares, compasses, and protractors, are to be afforded throughout the course. Drawing with these instruments should include easy exercises in the accurate setting-out of lines, angles, and simple geometrica figures drawing to scale in plan and elevation, and very easy exercises in solid geometry. All drawings to scale should invariably be done from actual measurements made by the pupils themselves. The instrumental drawing should be associated as far as possible with the practical work in arithmetic and with constructive work in paper, cardboard, wood, &c.

No subject can be recognized as a subject of handwork in classes of the Senior Division that would not also be recognized for corresponding classes under the Regulations for Manual and Techincal Instruction. Handwork where reckoned separately for the purposes of a certificate of proficiency or of competency in Standard VI must be a subject entitled to be so recognized, but may not be a branch of drawing or science within the meaning of the ordinary requirements in these subjects. In any cases where doubt may arise as to the proper relation of programs presented under these different headings the Inspector shall decide with due regard to the circumstances of the school and the sufficiency of the programs to meet a reasonable interpretation of the regulations.

NATURE-STUDY AND ELEMENTARY SCIENCE.

32. The purpose of nature-study is to train children in the careful observation of surrounding objects and common phenomena, and to set them to ask themselves questions such as "What does this mean, and how does it act, and why?" Even should it not be possible, as in small schools under the charge of one teacher, to assign to nature-study a separate place on the time-table, and by means of lessons on objects, on natural history, and in elementary science to give a definite course of instruction of this kind, yet the idea and spirit of it may be carried out in other ways. The most important parts of the lessons on geography may be thus described; some of the best subjects for exercises in oral or written composition may be led up to by questions based on the children's own observation in their ordinary life, or in their rambles about the district; the information given in many of the reading-lessons may be tested, confirmed, supplemented, and reinforced by nature-study; drawing and modelling may serve as vehicles for nature-study and thereby gain an added interest. In short, there is hardly any subject in the school course into the teaching of which the ideas that underlie nature-study may not enter.

In schools of Grade 4 and higher grades, where it is expected that provision shall be made for a definite course of nature-study or elementary science, the remarks just made apply with equal force; even the handwork, which may seem at first to compete with it for a place on the time-table, will be found to give material aid to nature-study. This will be most clearly seen in those branches of handwork which are of the character of applied science, such as agriculture, cottage-gardening, dairy-work, for which the habits of careful observation acquired in nature-study are the only sound foundation.

It would be well, therefore, for the teacher, when drawing up the program of work in the several subjects of the syllabus, to have in mind a scheme of nature-study, and the various parts of the instruction should be so co-ordinated as to pursue this scheme continuously throughout the school course.

Nothing can be considered as nature-study unless it includes an actual study of things themselves by the individual children; models, pictures, and books may be valuable aids, but are not substitutes for it.

There is no difference in the aims of what is here called "elementary science" and what is called "nature-study"; both are intended to give the children the beginnings of scientific method rather than to teach them a systematic science.

In schools with two or more teachers the head teacher shall draw up and show to the Inspector a program of a definite course in nature-study and elementary science taken in the Junior and Senior Divisions.

Suggestions for drawing up programs in nature-study and elementary science will be found in the Appendix.

GEOGRAPHY.

Physical Geography.

33. This part of the subject should be based as far as possible upon the actual observation of natural phenomena by the children; where the actual phenomena themselves do not come within the range of the children's observation, models should be used if possible. Pictures rank next in value to models. Models of wet sand or clay or plasticine form an extremely useful means of instruction, and in most cases it will be an advantage for the children to make such models themselves, either from their own observation or from the teacher's copy. Carefully selected pictures taken in conjunction with maps form a good vehicle for lessons on subjects lying more or less outside the children's experience. The more remote the place, or the less familiar the subject, the more necessary is the use of pictures or of other auxiliaries. (Various series of hand-pictures for class use are issued free to schools by the Education Department.) The children should be taught to make maps or plans of the district from their own measurements, increasing in exactness from year to year, with a view to making them understand how maps are made. As an instance of what is meant, the children in the early stages might be taught to measure approximately, by pacing, the length and breadth of the playground, the distance from their homes or other well-known points to the school, &c.

The mathematical geography will be of far more value if it is based upon actual measurement and observation, and if drawings and models are made to illustrate the facts observed, so that the children may gain thereby clear conceptions of the daily and yearly movements of the earth, of the seasons, and of such phenomena as tides and eclipses. The action of rivers can be studied from nature in the neighbourhood of almost every school, and even the effect of a shower of rain as seen in the playground or the public road may be utilized for this purpose. The action of the sea and of ice and snow may in some cases be learnt first-hand; if that is not possible, models and pictures should be used.

Some of the physical phenomena lend themselves to illustration by experiments—*e.g.*, the fact that warm water floats upon cold water, and that a block of ice floats in water with the greater part of its bulk below the level of the surface of the water; the most obvious facts in regard to evaporation and the condensation of vapour on a cold surface; and so on.

Simple weather records should be kept in every school, and should lead up to an elementary treatment of the climate of various parts of the earth. The chief minerals, plants, and animals of various countries should be known, a collection of pictures and a school museum being useful adjuncts in this connexion.

As in the case of other portions of nature-study, the teaching should have reference to the surroundings of the school, and the scheme of work should be drawn up accordingly. The suggestions in the Appendix will indicate the kind of work that is intended to be done under this head, but any suitable program may be accepted by the Inspector.

Political Geography.

As physical geography is a part of nature-study, so political, social, and commercial geography is one of the most important branches of humanistic study in the school, akin in its effect to the study of history, and probably easier in many ways for the children to grasp. The object should be to give the children a knowledge of the British Empire and of the chief foreign countries, so as to arouse an intelligent interest in human life in its varied aspects, and to show, as far as it is possible for the minds of the children to see it, the connexion between natural conditions on the earth's surface and the civilization of man. Here again pictures form a most valuable means of instruction; stories of travel (especially if well illustrated) and school museums serve useful purposes also. Globes and good maps should be used constantly, and the pupils should acquire the habit of making their own simple sketch-maps, and of drawing maps to scale. Elaborate copies of maps in detail, however, are more or less waste

of time. The lessons in geography should not be used as an exercise of the memory; the most important facts will be remembered easily if the interest of the children is truly awakened.

The range of geography is so wide that it is absolutely essential that each school and each teacher should have a program of work indicating clearly the ground intended to be covered in this subject; neither portion of the subject—physical geography or political geography—is to be neglected.

Topics of physical, mathematical, and political geography from which suitable programs may be drawn up are suggested in the Appendix.

HISTORY AND CIVIC INSTRUCTION.

34. The instruction given in the Preparatory and Junior Divisions may very well include the narration by the teacher of simple stories concerning notable persons in history or the life of man in primitive or modern times, or about elementary facts of civic life—the postman, the policeman, the doctor, the workman, the merchant, the farmer, the teacher, the soldier; the tramway, the railway.

For the Senior Division a course of lessons should be drawn up by the teacher to cover some or all of the ground indicated by the following list, and to occupy in the aggregate at least 160 hours in the four years. The pupils should have a general idea of the order of the leading events, but the subjects need not be taken always in chronological order; for some parts of the subject (*e.g.*, Parliament), indeed, especially in the earlier lessons, the order of instruction may be from the known to the unknown—that is, from the present back to the past. Britons and Romans. Coming of the English and the North-men into Britain. Introduction of Christianity. Alfred the Great. The Norman Conquest and its chief effect on English language, social life, and government. The Crusades. Magna Charta. Origin and development of parliamentary institutions. Bannockburn. The Hundred Years War. Invention of printing. Discovery of America. Elizabeth and the Armada. Shakspere. Milton. The rise of absolute monarchy. The Civil War and Cromwell. The English Revolution. The Cabinet and party government. How the wish of the people becomes law. Union of England and Scotland. The House of Hanover. The expansion of England. Foundation of Indian Empire. Seven Years War. Canada becomes a British colony. American independence. Freedom of the Press. Union with Ireland. Introduction of machinery. French Revolution. Napoleon. Nelson and Trafalgar. Wellington and Waterloo. Factory and other industrial and social legislation. Trades-unions. Industrial arbitration. Reform Act of 1832 and similar Acts. Abolition of slavery. The reign of Queen Victoria. Railways. Electric telegraphs. Gas-lighting. Customs and excise duties. Free-trade and protection. Popular education, primary, secondary, technical, and university. Tennyson. Cook and his discoveries. The foundation of the Australian Colonies. Colonization and early government of New Zealand. Abolition of the provinces. Leading principles of the British Constitution. New Zealand Government and other forms of colonial Government. Legislative and executive functions of Government. Local government. Courts and Magistrates. The privileges and duties of a citizen as a member of the Empire, of the State or colony, and of the municipality. The franchise. Elections. Labour. Capital. Money. Banking. Rates and taxes. Modern inventions. The telephone. Electric lighting.

History cannot be considered as fully dealt with if treated by the use of a reading-book only; there must be definite lessons given to the several classes by the teacher. A series of pictures such as those issued by the Education Department, and the lessons in the *School Journal*, should be freely used for the purpose of instruction in history, and the lessons should be linked with those in geography and in morals.

MORAL INSTRUCTION.

35. It is not intended that these lessons should occupy a separate place on the time-table, or be considered as forming a subject apart from the the general instruction or from the life of the school. The moral purpose should, indeed, dominate the spirit of the whole school life, and the influence of the school and its teachers upon the pupils should be such as is calculated to be a real factor in the formation of good character. Many of the reading-lessons and sometimes other lessons, and the ordinary incidents of school life, will in most cases furnish sufficient occasions for the inculcation of such principles as are indicated below. The teacher may, however, if he so desires, give a graduated course of instruction. In any case, the subject must receive full and adequate treatment.

The formation of habits—*e.g.*, order (tidiness at home, in school premises, in the street, tidiness of dress and person); punctuality and regu-

larity at school, at work, and elsewhere; industry in school, at home, in play; cleanliness of person (hands, faces, teeth, heads), of clothes, about the house, and in school; clean talk and clean thoughts; pure minds and pure deeds; truthfulness in word and deed; honest work; self-control; government of temper; patience; perseverance; moral courage; duties in relation to our own bodies and minds. Temperance in eating and drinking; alcoholic beverages and their injurious action on the body; moral evils of intemperance; what intemperance costs—these subjects may be treated in accordance with the program indicated on the wall-sheets issued by the Education Department. The reading of good books; choice of amusements; readiness to learn from all. Duties to others, to parents, to the family, to those in misfortune, to neighbours and those in authority, to fellow-pupils; respect for others; obedience to parents and teachers; toleration of others in regard to act, speech, and opinion; gratitude; practical help to others; speaking well of others; kindness, unselfishness, and self-denial. Good manners—at home, to parents, to friends, to brothers and sisters; at school, to teachers and fellow-pupils; in the street, to girls and women, to the old and to the young, to the sick and afflicted, to seniors, equals, and juniors—in short, to every one. Money and its uses; it represents the result of labour; frugality and thrift; savings-banks. Regard for property, public or private, not to injure or spoil. We should help to make the place we live in a more beautiful place. Civic duties; the franchise, and the duty of using it always with honesty and intelligence; the welfare of the State should be the care of all, for we are all members of it. Kindness to animals. Candour; honour; love of home; forgiveness and forbearance; peace; duty; accuracy and painstaking; contentment; benevolence or humanity; cheerfulness; self-reliance; self-respect; modesty; courage; prudence; zeal and energy; justice; loyalty and patriotism; respect for law; magnanimity; integrity of purpose; precept and example; formation of character; the golden rule.

The experience of teachers will guide them as to the best time and manner in which to impart these lessons; it will probably be recognized that abstract moral teaching fails to excite any interest in the minds of children generally, and that it is best to enforce the principles of moral conduct by examples taken from history, biography, poetry, and fiction, and by anecdote, allegory, and fable.

[It is recommended that part of the government of the school should be placed in the hands of the older pupils, who should thus be led to recognize their own responsibility for the moral life of the school community, and to gain some elementary experience of the principles of self-government. Certain pupils, some nominated by the teacher, and some elected by their school-fellows with the consent of the teacher, might be made prefects or monitors, and invested with authority accordingly.]

Health.

36. Lessons on the structure of the body and on health should be given in the Senior Division.

These should include such subjects as the following, treated in a very simple manner: The chief bones of the skeleton, and the way in which they form a framework for the body; tendons and muscles; the skin; the heart, the blood, and the general system of circulation; food and drink, digestion, the stomach and intestines; the lungs; the liver; the kidneys; the nerves; the brain; the eye; the sense of touch; the outer ear; the throat and nose. Air, ventilation, and respiration; water, washing, and cleaning; the choice of clothing, food, and drinks; the management of health; exercise; the avoidance of evil and unhealthy habits; infectious diseases; vaccination; methods of dealing with common ailments, colds, and common accidents.

The lessons on the structure of the body are intended not as a course in physiology, but solely to serve the practical purpose of an introduction to such a knowledge of the laws of health as every individual of the community ought to possess: *e.g.*, the study of the eye need not include a knowledge of all its parts, if it be known to act as a lens through which the rays of light pass and, forming an image on the retina, convey a visual impression to the brain. (The care of the eye should receive some notice.)

The instruction may be given partly in the nature-study or science lessons, and partly in special oral lessons, or in conversations based on the articles on this subject in the *School Journal*. If this be done, it will not be necessary to allot a separate place for the subject on the time-table.

Very simple preliminary work of the same kind may be done in oral lessons, at the discretion of the teacher, in the Preparatory and Junior Divisions.

SINGING.

37. The purposes of the singing lessons, and of the singing exercises practised in the schools, are—

(*a.*) By wisely chosen songs to awaken the imagination, and widen the capacity for emotion, while subjecting expression to artistic restraint:

(*b.*) To cultivate the musical ear and the love of sweet sounds, and to train the pupils in the use of the melodious tones in their voices:

(*c.*) To give some practical elementary knowledge of musical notation, and thus lay a foundation for further musical progress:

(*d.*) To develop musical taste, by the singing of appropriate melodies, aided by suggestion from the teacher.

Notation.—It is most important that the teaching of singing should include instruction of a progressive character in the elements of musical knowledge, so far as is necessary to enable the pupils to read music and to sing by notes instead of by ear. No training in singing by ear, however good the songs may be, can lead to any development of the power of musical expression, or to a growing comprehension of music; and in so far as pupils are unable to read music their elementary musical knowledge must be regarded as incomplete. For the special purpose of teaching children to read simple music, the value of the tonic sol-fa notation can hardly be placed too high. In the upper classes of a school where music is made a special feature and where the lower stages of the work have been mastered, the tonic sol-fa notation might merge into the staff notation. It should be observed that the two notations do not conflict with each other. Wholly to discard the tonic sol-fa notation is inadvisable: if both are used, the one should be made to serve as a stepping-stone to the other.

Breathing-exercises.—Breathing is the motor power of singing, and correct breathing should be the first step, for upon it good tone largely depends. Systematic practice, therefore, should be given in breathing-exercises, which should be preliminary to other forms of musical exercise until fair power of breathing-control has been gained. The chief points to be observed in these exercises are that the breathing should be diaphragmatic, that the shoulders should not be raised, and that the waist should not be unduly distended. In the upper classes, practice in the power of the retention of the breath should be developed. The pupils may be instructed to take a slow inspiration, and to make a slow expiration, while the teacher counts, say, to six. After a little practice, the time may be extended. In all cases the breathing should be through the nostrils. Care must be taken not to confound breathing-exercises for the purposes herein stated with breathing-exercises as prescribed for a course of general physical training.

Voice Exercises.—The purpose of these exercises is to produce a tone that is clear, mellow, and resonant, and the power to sing without strain. A "forward" production of the voice should be aimed at. The tone must be produced from the front part of the mouth, against the upper teeth, as it were. In these exercises the pupils should sing the scales downwards to the syllables *coo*, *loo*, *aw*, practised softly and slowly, the most suitable scales being E, E flat, D, D flat, and C, practised in that order. In the higher classes, the syllable *ah* may be used. This, the finest of vowel sounds, requires to be introduced carefully, for unless the tone is properly "placed"—that is, well forward—it will show a nasal quality. The teacher must listen carefully for any faulty production, which will manifest itself in a nasal, "throaty," or "woolly" tone, and in faulty intonation.

The position of the body has a great deal to do with good tone-production. The lungs must have freedom to work, therefore the position should be upright. A cramped position, feet crossed, or lounging, are quite out of place; the head should be upright with shoulders back. The mouth and throat should be freely open, and the tongue should be trained to lie flat: there should be no gasping, or heaving of the chest, when breath is required.

The "Break" in Voice.—The voices of almost all children have a "break" about the middle F. This is due to the change of register. Below the middle F all children's voices are, in their "raw" state, in the chest register. Generally speaking, children, when singing, should never use the chest register. If they are allowed to do so, the chest register will be carried, probably, far beyond its safe limits, and will bring about a condition of vocal strain. For this reason, as well as that the tone from the head register is better and free from risk to the voice, the head register should be exclusively used by all pupils in the primary schools.

If the "break" is not properly treated, voice-strain, poor tone, and inability to sing in tune will result. By the foregoing voice exercises on

the descending scales, the head register will be carried over the break and the tones of the chest register will be rendered unnecessary.

It is well established that practically there are no alto voices among young children, and, therefore, school singing for the younger pupils should not be on notes lower than C. The voices of all above the infant classes should be divided into first and second trebles.

A mistake is often made in pitching school songs too low, and thus carrying the chest register up. Too much emphasis cannot be laid on the statement that upward exercises should be by leaps, downward exercises by smaller intervals. The part-singing should be so arranged that in two-part songs the divisions should take the upper and lower parts alternately, the lower part being learned first.

Children with defective "musical" ears should be sorted out, and placed in front of the class to listen. They should be tested from time to time, and drafted into the singing sections as the "ear" develops.

Modulator practice.—This should be systematic and purposeful; mere wandering up and down the scale without a definite object in view is a waste of time. Teachers should know exactly what they wish to teach and should prepare their exercises accordingly. There should be no excessive use of the modulator; and its use should always be followed by ear-tests and other direct calls upon the musical faculties. Individual singing practice by the children should be encouraged.

Ear Exercises.—These should be given freely with the purpose of developing in the pupils the power to think musically. To this end it may be desirable to suggest terms and expressions, such as that one interval of the scale is "strong," another "sad," &c.; in other words, what is known as the mental effects of the intervals. Teachers should note that, in training the ear, *time* as well as *tune* (pitch) is involved. Time is determining the exact duration of the note sung: tune or pitch is determining the place the sound has in the scale. Whether time-words, hand-signs, or counting are used as aids, they should be associated with exercises appealing to the mental faculties of the pupils. Dictation exercises for both time and tune, at first separately, then combined, should be given occasionally.

Time Exercises.—These should be practised with the sol-fa time-names, or with ordinary numerals. Two-beat (pulse), three-beat, four-beat measures should be practised. When the exercises are known, they should be sung to the syllable *lah.* Free use should be made of rests—silence; sthe absence of a sound—a rest—makes the length of the other sounds more easily grasped.

Sight Singing.—In the teaching of sight singing, a musical effect should always be aimed at. Exercises, even those with scales and intervals, may be made interesting if beauty of tone and clean attack and release are insisted upon. Sight singing should include "leaps" taught from the modulator, and simple phrases and melodies.

Pronunciation and Enunciation.—The tone of singing depends upon the vowel sounds: all vowel sounds should be broad and free from nasal or "reedy" suggestion. The production of pure vowel sounds and soft tone may be developed by sustained notes on *oo, oh, ah, ay, ee.* Consonants are easier, but they require to be carefully produced. Special attention should be paid to the letters *t, d, m, n,* and the final *g.* Exercises on *foo, loo, too* would be found useful; the syllables to be sung staccato and many times in succession.

The Choice of Songs.—Songs should be chosen both for their musical and for their technical value. Pupils in the lower divisions should sing mostly in unison with an occasional essay into rounds and two-part songs. At all times the tone, whether loud or soft, should be of pleasing quality. Before a new song is taught the teacher should look to its general character, as the musical setting of a poetic idea. If its general character is forceful, accents will be the leading feature; if the reverse, expressive tone and changes of tone will be a marked characteristic. The chosen songs will often be suitable for lessons in reading or recitation, and the training in proper breathing and the accurate production of speech sounds will be as valuable aids to good speaking as they are to sweet singing. A child's speaking voice should indeed be made musical no less than his singing voice.

Good results can be expected only if a short time is given to singing each day, and a few minutes daily will be far more fruitful than one or two half-hours each week. With from ten to fifteen minutes each day excellent results should be obtained, and this should be the minimum time, considering the importance of the subject. The introduction of two or three minutes' singing at the end of each lesson is recommended.

NEEDLEWORK.

38. Needlework should be so taught as to secure a practical knowledge of sewing, cutting-out, and making ordinary garments, together with mending and darning. Exercises on small pieces of material should be used only for learning different kinds of stitches. At all stages the periodical construction and completion of some useful article by the scholars should be aimed at. At the same time the educational value of needlework as a form of hand-and-eye training must be kept in view, as well as its practical value.

Special care should be taken to avoid all conditions unfavourable to eyesight. In no case should materials and stitches be so fine as to strain the children's eyesight. Children of weak eyesight should not be given any exercise that would be injurious to their eyes, and in serious cases they should not be expected to do sewing at all.

Throughout the classes pupils should be taught to measure the quantities of material required for garments: they should learn the price per yard, and calculate the cost of each article made. In the upper classes the instruction should be amplified by lessons given in the selection of materials, in which it should be pointed out that the lowest-priced material, if it would fade or shrink, or not allow of "turning," would not be the most economical. By this means habits of thrift may be acquired.

"Cutting out" should be done on some principle of proportion. It is not necessary to devote time to making elaborate patterns. What is required is a method which imparts correct proportion, and which tends therefore to be practical, though it must not be merely mechanical.

Fancy-work of various kinds is not required, but girls who show proficiency in plain sewing, and have finished their garments for the year, may be allowed to do smocking or to ornament their work in other ways with feather-stitching, braiding, or other simple forms of decorative needlework. Their aesthetic taste may thus be cultivated, and the needlework correlated to some extent with art-work.

In general, it is to be constantly borne in mind that no opportunity should be lost of correlating sewing with other subjects of the school course; that the sewing lessons should be such as to establish closer relations between the home and the school, the articles selected for making being such as have some relation to the child's need at home or at school; that the article should be simple and not such as to demand too long an application of the children's attention, and that in all cases the necessary cutting and fixing, to secure a proper educational result, must be done by the children themselves, and not by others for them.

PHYSICAL TRAINING.

39. This should include organized games involving free movement, breathing-exercises and other physical exercises, as prescribed in the regulations for physical training.

At all times the teacher should see that the children breathe correctly and adopt natural and correct postures, and that the physical condition of the class-rooms and playgrounds is such as to encourage healthy bodily development. When the weather-conditions and other circumstances are favourable, many of the class-lessons may be taken in the open air; the windows of the class-rooms should be wide open whenever this is possible; full ventilation should be secured at all times, and at every interval the air of the rooms should be fully flushed.

J. F. ANDREWS,
Clerk of the Executive Council.

Appendix

APPENDIX.

SUGGESTIONS FOR COURSES IN VARIOUS SUBJECTS.

[The contents of this Appendix may from time to time be modified or expanded, and other subjects may be included for the information and guidance of teachers as the Minister of Education may direct.]

GEOGRAPHY.

Junior Division.

In all schools the nature-study lessons and observation-talks in the Junior Division should include some topics bearing on geography. Where S2 has a separate teacher the following list of topics will give an indication of the kind of work that may be done at this stage; much of it may be done where the Junior Division has only one teacher.

Elementary geographical notions are to be taught as far as possible from actual observation—*e.g.*, the nature of hills, plains, valleys, rivers; also of lakes, bays and gulfs, straits, islands, peninsulas, if examples of these are found in the neighbourhood of the school; the position of the sun at noon and at other times of the day; the position and length of the shadow cast, say, by a post in the playground at different times of the day; the rough determination of the north and south line and of the east and west points; the position of the school and class-room, and of buildings and other objects visible from the playground, with reference to the cardinal points; the direction of the wind on different days, and whether a given wind brings rain, is hot or cold; the snow upon the mountains and lower hills, whether always seen or not; the distinction between clay, sand, and other very common rocks.

First lessons might be given in the playground, or the roadside near the school, upon the action of water running down a gentle slope to form streamlets, streams, and rivers. Models of damp sand or clay should be made by the teacher in the playground, or on a large wooden tray or a blackboard placed upon the floor, to illustrate the geographical features seen within a short distance of the school, and the children should make smaller models of sand or clay or plasticine.

The children should be taught to make plans, first full-size, of wooden blocks or bricks, books, ink-pots, &c.; then plans, roughly to scale, from their own measurements of desks, tables, the class-room, the school, the playground; and the drawing of plans might be extended to such portions of the district within, say, three or four miles of the school as come within the common knowledge of the children. The direction of one or two of the nearest towns should be known, and a plan or simple map should be drawn upon the blackboard to show the relative positions of these towns with reference to the school. All plans should be drawn in the first instance with the blackboard, slate, or paper in a horizontal position. (The drawing of plans may be very conveniently co-ordinated with the lessons in "brick-building" if this is taken as part of the course in "handwork.")

The geography indicated above is, strictly speaking, a part of nature-study, and should be treated accordingly.

Senior Division.

Physical and Mathematical Geography.

First Year (S3).—The elementary geographical notions should be taught, or, if geography has been taken in S2, be extended as far as possible from actual observation (or, where this means cannot be used, from pictures), models and plans being constructed by the teacher and the children. The children should also be taught to observe the length of the shadow of a post at noon at different times of the year, noon being the time on any given day at which the shadow is shortest, and at which, therefore, the sun is highest in the sky (with indoor illustration of the same principle by the shadow of any object cast by a lamp or candle held at different heights); the more exact position of the north and south line, being the direction of the shadow at noon (the north and south line when found should be marked by two wooden pegs in the playground and by two brass nails in the class-room); the directions N.E., S.W., N.W., S.E., &c.; the compass, the fact being observed that the north and south ends of the needle point to the east and west respectively of the north and south line; the phases of the moon, and the number of days from new moon to new moon, from new moon to full moon, and from full moon to full moon; if the children live near the sea, they should know, further, the time of high tide and low tide, and the interval between high tide and

high tide, or low tide and low tide, or high tide and low tide; the chief forms of clouds—the "feather-cloud" (cirrus), the "heap-cloud" (cumulus), the "sheet-cloud" (stratus), the "rain-cloud" (nimbus); the most common birds, plants, and insects found near the school; the fact that water sinks very quickly through sand but not through clay.

Further lessons might be given outside on the action of water and the drainage of the earth's surface; river channel, source, mouth, tributary, wearing-away or denudation of the surface and deposition of alluvium (the terms "denudation," "deposition," "alluvium," need not necessarily be used); the formation of deltas.

More extended and more accurate plans of the neighbourhood should be drawn to scale, observations and measurements being made by the children. There should be in every school a map, on a large scale, of the town or district, and a map of the education district or of the provincial district in which the school is situated. The children should know three or four of the most important places and geographical features within that district; but it is not desirable that any name should be known merely as "a name on the map": every name (and this is true throughout the whole course in geography) should be introduced to illustrate some principle, or in association with some interesting fact. Pictures of places or geographical features not known to the children should always be used, if available. The map of the district should be laid flat upon the ground with its north towards the true north, and the children should be led to connect the information it gives with the knowledge they have already acquired, and with the plans they have drawn. This method might then be extended to the map of New Zealand, the positions of, say, twelve places in other parts of the Dominion being known in relation to the education or provincial district in which the school is situated.

Second Year (S4).—The work is to be extended—*e.g.*, the action of rain and of rivers should be more fully treated, especially as regards denudation of the earth's surface, and the deposition of alluvium in the lower course of a river, or at the inside of a bend in its course or at its mouth, and the formation of bars and deltas.

The relative rapidity with which, or the order in which, pebbles, sand, and clay are deposited may be observed from experiment, or from the action that takes place in a pool, in a small stream, or by cutting a section with a spade through the sediment left in a large puddle (the section, of course, should be cut when the water has run off or evaporated); or experiments might be made in the playground, or with a wooden tray and clay, sand, and shingle, as suggested above.

A fairly complete study should be made of some river known to the class or to most of the individuals in it; comparison should then be made between this river and two or three other rivers in New Zealand, and also, if pictures can be obtained, between the given river and, say, one river in each of the great continents.

The children could then infer from the map of New Zealand the general slope of the surface, and could construct rough relief maps of the North and of the South Island. The same process might be applied in a general way to the continents, of which, also, very rough relief maps could be made.

The process of evaporation should be demonstrated practically—first, rapid evaporation, as when water is boiled; next, slow evaporation, as of a small quantity of water in a saucer in front of a fire, or in the sunshine, or even anywhere in comparatively dry air; next, the formation of vapour clouds, the deposit of water on cold surfaces, the formation of dew, &c.

Plans of the playground may again be drawn, and distances and areas calculated therefrom. This should be followed by the drawing of more extensive and more accurate plans of the district around the school than have been made in S3; the rough measurement of distances might be computed therefrom.

The following work may be done either in this class or in S5: By means of an upright stick, post, or block, the children might be taught to find the altitude to the nearest degree of the sun, at noon at the equinoxes and at the solstices; to note approximately the length of day and night, checking their observations by reference to the times of sunrise and sunset as given in any almanac.

Some very useful work might be done in the direction of the discovery by the children from their observations of the nature of the movements of the earth and of its form. It would, for instance, be quite possible for children at this stage to be taught to recognize a few of the brightest stars, to notice that those in the northern sky, on any given evening, seem to be moving from right to left, and that the Southern Cross seems to be turning round in the same direction as the hands of a clock.

Appendix.

Hence, by a general but simple inference, they might be led to the idea of the daily rotation of the earth. There should be no attempt to hurry the process; there should be observations taken by the children themselves during the winter months, and the conclusion should be formulated when their minds are ready for it.

If an eclipse of the moon visible in New Zealand occurs, the opportunity should not be missed of showing the children, by lessons beforehand upon shadows, and lessons afterwards upon what was seen during the eclipse, what is really for children probably the best proof of the earth's rotundity.

(a.) Map-reading and Physical Geography.

Third Year (S5).—The scale of the wall-map of New Zealand used in the school compared with the scale of the map of the district; the scale of the map of New Zealand in an atlas or geographical reader. A few distances may be computed from the map of New Zealand, and also, roughly, the areas of the North and South Islands, and of the whole Dominion. Either in this class or in S6 the process may be extended so as to give clear ideas as to the distance of New Zealand from Australia, Fiji, &c.; the extent and area of Australia, &c. First ideas (to be further extended in S6) about glaciers and the work of ice; the sea and its work; tides; winds and currents; coasts, rocky and otherwise; capes. General distribution of land and water on the surface of the globe; the land hemisphere; the water hemisphere. The mountain and river systems, in outline, of some one continent.

Fourth Year (S6).—The scale of maps generally, illustrated by some one or two maps, as of England, Australia, India; distances and areas computed therefrom; a few distances measured on the globe. Ice; experiments with ice; temperature of melting ice; volume and density of ice; fracture of rocks; easy to make two surfaces of ice freeze together, &c.; snow; glaciers; the work of ice in shaping the surface of the land; icebergs. Formation of deltas and alluvial plains, *e.g.*, the Canterbury Plains. Winds, more fully than in S5. Radiation; specific heat of water and air; the principal causes of the differences of climates; continental climates; island climates. Rise and fall of the land surface; earthquakes; volcanoes.

The following portions of mathematical and physical geography should be taken in a connected logical order, but the lessons may be spread over the third and fourth years of the Senior Division (S5 and S6) in some such way as is indicated below. The instruction may be founded in every case directly upon observation and experiment, inferences from which should be explained by means of globes and other models, and by diagrams. Should teachers from any cause, however, find themselves unable to base their teaching directly upon the observation of the stars and other phenomena, simple models may be used and diagrams drawn therefrom; in no case can the teaching of mathematical geography be regarded as satisfactory if it is taught from books and diagrams alone.

The common "proofs" that the earth is nearly spherical may be used—as, by inference, from what is seen when ships go away from land; the circular form of the offing or horizon; the shape of the earth's shadow on the moon; the circumnavigation of the world.

The movements of the earth should be explained in a simple way; if the children have not done the work suggested in S4 intended to convince them of the daily rotation of the earth, they should do it now. They should be led to infer the daily rotation of the earth from their own observation of the sun and moon and of stars in the northern and southern skies. The reason for the differences of local time may easily be inferred from the fact of the earth's rotation, as it is always noon on the meridian directly under the sun. With the aid of two globes, one for the earth and one for the sun, it may be shown that, if the earth moves round the sun during the year, the part of the heavens seen at night will vary according to the time of year. Hence the observed fact that different stars are seen on or near the meridian in the northern sky at different times of the year (say, at 8 p.m.) will lead to the inference that the earth does move round the sun. (Useful stars for this purpose are the constellation of Orion, first week of February, 40 degrees to 60 degrees above the northern horizon; Sirius, the brightest star in the sky, end of February, high up; Regulus, in the constellation Leo, fourth week in April, in lower part of northern sky; the bright star Antares in the constellation Scorpio, end of July, high up in the sky; Altair, in the constellation Aquila, middle of September, lower part of sky.)

The children should be shown how to identify the chief stars and star-groups in the southern sky, such as the "Pointers" in Centaurus, the Southern Cross, Canopus, and Achernar. They may then be led to see from their own observation that a point in the sky about half-way between Achernar

and the Southern Cross is always over the same house or tree or other terrestrial object, and at the same height. If the globe representing the earth be fitted with an axis, it may easily be shown that the axis must always point nearly in the same direction.

Using the observed facts that the altitude of the sun is much greater in summer than in winter, and employing the models already referred to, the teacher can readily explain that the axis of the earth is not at right angles, but is tilted to the plane of its orbit. If a small piece of paper be fixed on the globe to mark the position of the school, and the globe made to revolve (keeping the southern pole uppermost), the length of time the paper is visible from the position of the sun will explain the varying length of the day at different times of the year. The actual length of the day should be observed, and should also be calculated from the times of sunrise and sunset given in an almanac. The six months' night at the poles may be explained from the models.

The explanation of the seasons naturally follows. The mean temperature at different times of the year should be found. It is recommended that the temperature in the shade should be recorded each day (say, at 9 a.m., at noon, and at 3 p.m., or, if possible, at 5 p.m.), and also the temperature in the sun at noon; and that the corresponding mean temperatures for each week and each month should then be found.

Each teacher must decide for himself whether he can clearly and usefully cover the whole of the ground indicated above. It is absolutely essential that the various steps should be taken at reasonable intervals, time being allowed for observations to be repeated and for the meaning of observations taken to be grasped by the minds of the children. Each of the observations suggested occupies only a comparatively short time. But no attempt should be made to teach mathematical geography in one series of lessons in a few days, or even weeks or months. The rule must be, strictly, one step at a time; and at every step co-ordination should be made with matters of direct human interest. The explanations cannot be given effectively without the use of a globe or ball, and it would be of great service if each child or pair of children had a small globe for the earth, with another globe or ball to represent the sun. Most of the work is, of course, of such a nature that children in a primary school cannot be expected to give formal written answers to questions upon it; all examinations should therefore be taken orally, with the models actually before the class.

Political Geography or Social and Commercial Geography.

Unless step by step throughout the course the lessons in physical and mathematical geography are linked with the lessons in social and commercial geography the former will be to a large extent aimless, and without real human interest to most of the children. This part of the subject should therefore be taken in each year of the Senior Division—indeed, it should be begun, in the form of simple stories of travel and adventure told by the teacher, in the Junior Division. If geographical readers are used, the reading lessons should be explained fully by the aid of maps, and, where possible, of pictures and other accessories.

The course should consist of lessons on some of the following subjects, as shown in the program presented by the teacher in accordance with the syllabus.

New Zealand: (1.) Its natural productions of geographical or commercial interest—*e.g.*, ores and minerals, rocks, insects; birds and other animals; plants, native and introduced. (2.) Influence of the position, soil, climate, and natural productions of New Zealand upon the occupations, trade, and general life of the people; internal and external communication.

The five zones; their climate; animals and plants characteristic of each—*e.g.*, regions of pines, rye, wheat, maize, rice, and also of gooseberries, apples, vines, figs, oranges, bananas, palms, pineapples, dates, coconuts; habitat of the polar bear, reindeer, whale, buffalo, camel, elephant, lion, tiger, ostrich, and also of the kangaroo, crocodile, seal, herring, cod, penguin, shark, humming-bird.

Alluvial plains and valleys; areas of cultivation on the world's surface; wheat and chief wheat-producing countries; other articles of food-supply—*e.g.*, maize, rice, meat, fish, butter and cheese, sugar, tea, coffee, fruits, &c.

Coal, iron, gold, silver, petroleum: where found; effect on manufactures, industries, and prosperity of various countries.

Cotton, wool, silk: where most largely produced and manufactured. Other important animal products, such as leather, ivory, &c.

Timber, different kinds of; other vegetable productions, indiarubber, &c.

The different races of men, and where they live; their houses; degree of civilization; effect of climate and other physical conditions on civil-

Appendix.

ization; migrations of races—*e.g.*, English, Turks, Arabs; European colonies; a few typical examples of the connexion between history and geography—*e.g.*, discovery of America, independence of the Swiss, migrations of the Danes; chief lines of trade and communication in the world, oceanic, river, and continental; influence of winds, &c., on trade-routes; effect of the distribution of land and water upon trade and trade-centres; influence of rapid steamships and ocean cables in modifying this.

Influence of position upon importance of towns, whether situated at mouths of rivers, at head of navigation of large rivers, on large lakes or natural harbours, on lines of communication, on coalfields, &c.

Geographical causes of the rise and importance of the British Empire.

Notable travellers and geographical discoveries.

The object of the course sketched out here is to show, as far as it is possible for the minds of the children to see it, the connexion between natural conditions on the earth's surface and the civilization of man—*i.e.*, between physical geography on the one hand, and political and commercial geography on the other. In the course of the lessons many names of places will be naturally introduced in order to illustrate the principle which it is sought to establish, but it is not intended that the lessons should be used as an exercise of the memory. It will be expected, however, that the illustrations employed will be so chosen as to give the children clear ideas of the extent of the British Empire and of the position of the most important places in it; and similarly in less detail of the chief foreign countries.

Too much detail should not be given; for instance, the position of Manchester and the cause of its importance should be known; but such information should not be expected with regard to Bolton, Preston, and other "cotton towns." Again, Constantinople should be known; but a knowledge of the position of Adrianople would not be expected, unless recent events had brought it into prominence. The teacher will not omit to call attention to the position and importance of places connected with the chief current events recorded from time to time in the newspapers.

The parts of the subject indicated under this heading cannot for the most part be taught directly from observation of the actual facts; but it is recommended that pictures should be used as largely as possible in conjunction with the globe and maps.

Series of pictures for geographical teaching are published by the Education Department; and other suitable pictures from illustrated papers are available in almost every school; if these are mounted upon brown paper and kept, each school will in time come to possess a collection of pictures that, with a little supplementing from other sources, will form a very useful adjunct to the lessons in physical and descriptive geography. The pictures should be used in such a way as to call forth the reasoning powers of the children as much as possible. They may be passed round the class in order, each pupil having a map, or atlas, and a note-book; and the lesson at the end might sum up and enforce the ideas gained from the pictures. The pupils should be trained in the habit of making rough sketch-maps of small portions of the earth's surface to illustrate special points, but it is not desirable that time should be spent in making elaborate copies of maps in the atlas. The use of pictures will generally also secure attention to places of interest in connexion with current events, a point that should never be overlooked in the teaching of geography. The same pictures would in many cases suggest suitable subjects for oral and written composition lessons in the upper classes.

NATURE-STUDY.

The lessons given should be marked by three main characteristics. In the first place, they should be really lessons on objects, or on natural phenomena—that is, they should treat of things that each child in the class can see with his own eyes or handle with his own hands; secondly, they should not be disconnected, but should form a course of lessons co-ordinated with one another, and, as far as possible, with the other subjects of instruction; thirdly, every lesson should be followed by a conversation-talk, and the oral description by the children, or by one or more of them, of what they have seen and of what they have learnt from their observation. Often the nature-study may be appropriately followed by a handwork lesson (drawing or modelling) based upon it.

The following list of topics, the material indicated under the head of Physical Geography, and the suggestions given elsewhere in these regulations, will serve as indications of the kind of teaching that should be included in a course of nature-study:—

[It will be understood that it is not intended that common objects of manufacture or daily use should be excluded from the list of suitable topics.]

The structure of a bird; birds and their habits; the study of an egg at various stages. The structure of a well-known mammal, as a rabbit; the differences in form and habit of various mammals. The human body. The structure of a fish. Insects: the life-history of a few common insects—*e.g.*, butterflies, moths, flies, beetles, grubs and caterpillars, hive-bees and wild bees, &c. (butterflies or moths may be reared in the school). Lizards, frogs, crabs, oysters, worms, and other forms of animal life as seen in ponds or on the sea-shore. Plants; flowers, wild and garden; roots, leaves, seeds, and fruits; the life of plants, germination and growth; the effect of light, moisture, soil, and manures. Food of plants. Trees and the common kinds of timber. Shrubs. Wheat and other useful grasses. Other useful plants. Useful vegetable products: starch may be obtained from a potato, sugar from a parsnip, beet, or carrot. Ferns. Fungi; mildew. Water, its nature and forms. Soils; clay, sand, limestone, mud, gravel, &c. Quarries; a few common rocks, minerals, and fossils; typical volcanic rocks contrasted with stratified rocks and metamorphic or altered rocks (specimens should be handled by the children). Coal. Quartz. Shingle of rivers and of the sea-shore. Clay; bricks and tiles. Building-stone. Pottery. Glass. Mortar; cement. Road-metal. The air; oxygen; carbonic acid. Vapour-clouds. The thermometer and temperature. Ventilation. Winds. The barometer. Frost and heat. The weather; weather-charts. Rainfall. Hydrometer. Milk; cream; curds; whey; cheese; tests for milk; separators. The pump; siphon; fire-engine. Pressure of water; artesian wells; use of a head of water. Density; flotation. Mechanics in everyday life: levers, pulleys, steam. Physics: expansion of solids, liquids, and gases when heated; magnetic compass. Solutions. Solvents: water, alcohol. Crystals. Common elements and compounds: sulphur, iron, common salt, soda, saltpetre, mercury, tin, zinc, lead. Distillation; filtration. Fire. Candle. Coal-gas. Tar. Kerosene and kerosene-lamps. Sun, moon, planets, stars, meteors, comets. Tides. Eclipses. The seasons. The sea and the sea-shore. Outdoor studies in geography. Land-measuring. Natural history calendars; weather calendars; astronomical calendars; &c.

Some of these subjects may be taken in junior classes; others are suitable only for senior classes; others, again, may be taken twice, three times, or even oftener in the school course—at first in a simple manner, afterwards in a way suited to the more mature powers of observation of older children. Natural-history calendars of a simple character might be kept as early as S2. Weather calendars might begin in S4. (The school should be equipped for this purpose with a thermometer, maximum and minimum by preference, and a rain-gauge; also, if possible, with a barometer.)

Of course, no school will attempt all the topics that are suggested above. Lessons will be arranged for various schools according to the tastes and acquirements of the teachers, and should in all cases have immediate reference to the local surroundings.

ELEMENTARY SCIENCE.

The course in science for the upper classes should be chosen with regard to the district in which the school is situated. Even with careful attention to individual practical work, a course of science for young children will probably fail as an educational instrument if it is too far dissociated from their daily life and experience. Two specimen courses are given below—one (in elementary physics) for town schools or large country schools, the other for country schools. These courses are intended as suggestions. Any suitable program of work in elementary science drawn up to cover the three or four years of S4 or S5 to S6 or S7 will be accepted by the Inspector.

A course of elementary physics for the upper classes of a town school or of a large country school might include such work as is indicated in the following notes, some of the more elementary portions of which may be attempted even before the pupils reach S4:—

Measurement of lines in inches and sixteenths, in inches and tenths, using decimal points to mark tenths; measurement of length, &c., of desks and other objects, of girth of chest, &c. Take the mean of several measurements. Measurement of lengths in the class-room in feet and inches, in the playground in yards, &c., or in chains, yards, &c., or in chains and links. Measurement of circumference and diameter of circles, as of a penny, and of a cylinder. Ratio of circumference to diameter approximately. Diameter of a sphere.

Divide a square drawn on paper or cardboard into square inches; find area of square. Similarly, find area of a rectangle.

Draw to suitable scales plans of top of desk, table, class-room, &c. Find area of each.

Appendix.

Draw scale of yards and chains. Find area of square chain. Draw to scale plan of acre. Find area in square chains.

Draw square mile to suitable scale. Find area in acres.

Draw playground, or rectangle in playground, to scale. Find area.

Construct table of square measure.

Find surface of a cube or other rectangular solid, of outside of a box, of walls of room, &c.

Wrap paper round cylinder; unroll and find surface.

Find the scale of a map, as of New Zealand, England, or India, taking one degree of latitude as equal to 70 miles; estimate the area of the country, or of some part of it. The estimate may be confirmed by each pupil making a tracing of the map, cutting it out, and also cutting out a square piece of paper representing, say, 10,000 square miles. All the tracings should be weighed, then all the squares, and the area calculated.

Draw circle on cardboard; draw two diameters at right angles. Bisect right angles. Divide circumference into 6, 12, 24 parts. Prove angles and sectors equal (by cutting out and superposition). Define degrees.

Construct table of angular measure. Find angles between hands of clock at 1 o'clock, 2 o'clock, &c.

Construct a cardboard protractor; with it construct various angles.

Build up cubes and other rectangular solids with wooden or cardboard cubes, blocks, and slabs. Find volume in cubic inches. Construct table of cubic measure.

Find volume of box, class-room (measuring the height to wall-plate if there is not a horizontal ceiling).

Make a simple lever with a rule or lath in which the fulcrum is between the power and the weight. Show that power $\times$ its arm = weight $\times$ its arm.

Make and mount a simple balance; make weights of lead and copper sheeting, or of shot in canvas bags. Weigh various substances, using generally method of double weighings.

Make cubic inch of cardboard, caulking it with wax or candle-grease. Find weight of cubic inch of water in grains. Check by weighing $\frac{1}{4}$ pint or 5 fluid ounces of water (which contains about 8·66, or $8\frac{2}{3}$, cubic inches).

Find weight of cubic inch of wood. Find relative density or weight of wood compared with water—*i.e.*, weight of cubic inch of wood divided by weight of cubic inch of water.

Graduate a glass jar or bottle, with neck removed, into cubic inches, with paper scale gummed outside. Find volume of block of wood by pushing it below surface of water in jar, and noting rise of water; hence find relative density; in like manner, that of a pebble, glass, iron, lead, candle, &c. Find by same graduated jar, the water being removed, relative density of milk, olive-oil, alcohol, turpentine, milk-and-water, salt water, mercury (which may be put into a small bottle and held below surface of water, the volume of the small bottle being first found).

Find volume and relative density of various coins—penny, florin, &c. (Take several pennies, &c., at a time; shake them about so that no air is enclosed.)

Take a flask or bottle, apparently empty; immerse below water, and let water fill it. What escapes from jar?

Put a little water into a large flask, fit with stopper and glass and rubber tubes; boil water and drive off air, closing rubber tube with clip. Let flask cool; weigh; admit air and weigh again. (Put clip into scale with flask.) Weigh flask full of air. Fill it with gas from gas-jet and weigh again. (Keep it away from a flame.) Warm flask with air; close with clip. Let flask cool; weigh. Admit air; weigh again.

Take a U tube (two straight tubes joined by rubber tube will do). Pour in water. Hold at different angles; note level of water. For one branch of U tube substitute tube of a glass filter; pour in water; note level in funnel of filter and in tube.

Construct model to illustrate artesian well; also model with branches to illustrate a high-pressure water-supply system.

Very slightly oil wooden cube; float it in water. Measure depth immersed, and total depth of cube. Find the fraction, depth immersed, total depth, and compare with relative density of wood.

Float oil on water; warm water (coloured) on cold water, &c.

Take U tube as before. Pour in mercury. Pour alcohol into one branch, and water into the other until mercury is at same level in both branches. Measure heights of alcohol and water above mercury; find the fraction $\frac{\text{height of water}}{\text{height of alcohol}}$; compare this fraction with relative density of alcohol. Repeat for other liquids (including mercury).

Take a U tube, one end closed; hold it with closed end down, and nearly fill with mercury; raise closed end. What happens?

Take the U tube; hold closed end up. What happens? Attach rubber to open end, placing it below surface of water; lower the other end. What comes out?

Make barometer; graduate it. Keep record of readings.

Fill a wide-mouthed bottle with water, and invert it over water; lower a similar inverted bottle, apparently empty, into water; turn it round gradually with its mouth below that of the first bottle. What happens?

Fill a common syringe with water, noting what happens as it is filling with water; hold the nozzle against a piece of sheet rubber or against the finger; try to push the piston down.

Repeat the same experiment when the syringe has only air in it. Is air compressible? Test the same fact with the U tube with air in the closed end, pouring additional mercury into the open end. Try this also with water instead of air in the closed end.

Fit a piece of cardboard or glass plate to the mouth of a glass jar or tumbler; fill the jar with water, and invert it, holding the cardboard against the mouth of the jar. What happens? Repeat the experiment, but only half-fill the jar. What happens? (Invert it over a basin or bucket.)

Substitute a lamp-glass for the jar, fitting a card or plate to both ends. Repeat the experiment. Remove the top plate. What happens? Why?

Make a siphon (the open U tube, inverted, will do). Make a siphon of rubber tube only. Try the effect of raising the free end above the level of the water.

Make a hole at the highest point. What happens? Why?

Take two pieces of rubber cord, one stouter than the other, and two boards. Fasten each cord by a drawing-pin through its end to a board, and tie a loop of silk thread round the cord 12 in. from the drawing-pin. Attach a weight to the loop of one cord, and measure the stretched length. What stretches the cord? Remove the weight; take hold of the cord by the loop, and pull it horizontally until it is stretched to the same extent. What is the force of your pull?

Attach the same weight to the second cord, and repeat the experiments. Place both boards horizontally and connect the loops by a piece of silk; pull the boards apart until the first cord is stretched as much as it was at first. How much is the second cord stretched? What stretches each cord? (After a few experiments fresh pieces of rubber cord should be used.)

Attach a toy wagon to one of the cords. Incline the board at any angle, the fixed end of the rubber cord being at the highest part of the board. Put shot or weights into the wagon until the cord is stretched as much as it was before. What is the total weight of the wagon and shot? Call this the *weight*. What is the pull on the rubber cord? Call this the *power*.

Find the fraction or ratio, $\frac{\text{weight}}{\text{power.}}$

Measure the length of the inclined plane or board; measure the height of the raised end. Find the ratio or fraction, $\frac{\text{length}}{\text{height.}}$ Compare it with the ratio, $\frac{\text{weight}}{\text{power.}}$

Make or procure a simple pulley; mount it and pass a silk cord over it. Attach equal weights to each end. Substitute the rubber cord fixed as above for one weight. Hang the other weight to it. How much is the rubber stretched? Replace the silk cord on the pulley; note the result. Incline the board at different angles. What pull is exerted by the cord over the pulley? Repeat the experiment with the inclined plane; but, instead of attaching the wagon to the rubber cord, attach the power by a silk cord passing over a pulley fixed at the higher end of the plane. Find the ratios — weight/power, and length/height — as before.

Vary the inclination of the plane, and so get law of inclined plane.

At this stage pupils may be able to express their ideas of mass, weight, and force more or less clearly.

Repeat the last experiments. Detach the wagon from the silk cord, and keep it in position with the finger: with what force does it press against the finger? Remove the finger: what happens? What force drives it down the plane?

Take or make a large glass syringe with a wooden piston with cotton-wool or woollen-yarn packing. Take out the piston, and put a small glass marble or bulb inside the nozzle of the syringe. Make a small hole in the piston, and fit the top with a small valve of rubber sheeting.

Illustrate principle of common pump. The apparatus may easily be converted into a model of the common pump.

Appendix.

Place an iron rod with its ends on two bricks (or wooden blocks); drive a nail into one brick to prevent the rod from slipping. On the other brick place a piece of steel wire or a darning-needle at right angles to the rod, so that the end of the rod rests upon the wire, which is free to turn round. At one end of the wire, at right angles to it, attach a thin piece of straw or a fine splinter of wood. Find how many revolutions the straw makes when the rod is pushed on one inch. (Use a protractor to measure the angle or fraction of a revolution.) Set light to some methylated spirit in a narrow tin dish placed under the rod, and note the greatest expansion that takes place.

Repeat the experiment with a brass or copper rod, using the same amount of spirit.

Take an ordinary screw-wrench or spanner and a brass curtain-ring or a penny. Adjust the screw so that the ring or penny will just pass between the jaws of the wrench. Heat the ring or penny, and then try to make it pass through the jaws.

Fit a flask with a stopper and glass tube, and fill it with water (with which may be mixed a little ink or a solution of indigo). Heat the flask, and note the result.

Let the flask cool. Pour out half the water, but let the lower end of the glass tube be below the surface of the water. Heat the flask again, and note the result. Why does the water in the tube rise higher than before?

Let the flask cool. Pour out all the water, and fit the stopper with a narrow tube bent at right angles. Attach the open end of the bent tube by rubber to the open U tube used before. In the U tube place some water or mercury. Heat the flask, and note the result.

Repeat the last three experiments, putting a thermometer into the flask. Note the readings of the thermometer.

What is the temperature of the air in the room? of the water from the tap? of the air outside? in the sun? What temperature is shown when the thermometer is held inside your mouth?

Find the temperature of the steam immediately above the surface of boiling water.

Find the temperature of melting ice.

Put some pieces of ice into water. Why do they float?

Into the jar used for measuring volumes put some water cooled, say, to about 40° Fahr. and a piece of ice, as large as possible, enclosed in enough wire netting or perforated zinc to make it sink. Note the temperature and volume. Watch the change in temperature. Wait until the water is at freezing-point. When the ice has just melted, note the temperature of the water and the volume.

Melt a piece of candle gently in a test-tube; find the temperature when the candle is nearly all melted. When it is completely melted, throw in one or two small pieces of the same candle. Do they float or sink? Why?

To this course may be added experiments to explain conduction, radiation, and convection of heat; ebullition, evaporation, distillation, condensation of vapour; the formation of clouds, rain, and dew; the principles of ventilation.

Daily readings of the thermometer should be taken, and a record kept. Use maximum and minimum thermometer for this purpose if possible.

There might also be included in the course experiments to explain the composition of air and water, and the process and products of combustion; solutions and the change of temperature when, say, common salt or ammonium-nitrate is dissolved in water; filtration; the action of acids on carbonates, and of expired air upon lime-water, &c.

[The work thus indicated might be taken up in classes S5 and S6 as one of the courses of elementary science prescribed by the Regulations for Manual and Technical Instruction.]

Elementary Science in Country Schools.

The following rough notes are given as an indication of the topics from which there may be selected subjects for a course of lessons suitable for the upper classes of a country school.

Preliminary Work.—It is presumed that in the earlier standards lessons on objects will have been given with the purpose of teaching children to observe carefully and intelligently the simpler facts of animal and plant life as it may be seen around them, and that these lessons will have been grouped systematically so as to include, for instance, some of the following subjects: Man, rabbit, sheep, cow, horse, pig, dog, cat; fowl, duck, pigeon, sparrow, lark, blackbird, starling, one or more of the native birds of New Zealand; frog; eel, trout, rock-cod, sole; crab, crayfish, snail, oyster; spider, butterfly, beetle, &c.; bean, pea, sow-thistle, oat or wheat, ryegrass, cocksfoot, potato, rose, lily, sunflower, carrot, turnip; fern, moss, mushroom, mildew, yeast; gorse or broom; New

Zealand flax; willow, oak, white-pine, red-beech (commonly called "birch"); apple, plum, orange, gooseberry, strawberry; cabbage, radish, mustard; tomato; common trees and other plants found in the neighbourhood of the school. Appendix.

In S4 this work will be continued and still further systematized, and the children may begin, if they have not done so already, to keep nature-calendars and weather-calendars.

In their geography lessons the children will also learn from actual observation the simplest and most striking facts about rivers and the work of water on the earth's surface; clouds, rain, dew; cardinal points; the direction of winds; drawing of plans; height of the sun at different times of the day and year.

The drawing of plans may extend to the mensuration of squares and rectangles as set forth in the elementary course of physics suggested above.

Some such experiments and observations as the following may also be made. [The actual experiments and the work of caring for the plants, &c., should be done by the children individually.]

Raise seedlings of beans and peas in small pots or shallow dishes in sand and in garden-soil, planting seeds every two or three days; also raise other seedlings between two sheets of blotting-paper on a glass plate or in a saucer. Soak a few seeds also in water, and put a few into dry sand. Compare the seedlings raised. Observe the method of germination and growth. Note the parts of the seedlings—rootlets, root-hairs, stem, leaves, plant-hairs, &c. Raise in like manner seedlings of vegetable-marrow, mustard or radish, cabbage, sunflower, oat or wheat, and ryegrass. Observe the seeds after some days' growth. Moisten some fine wheaten flour. Knead it, and then wash out all the white powder (nearly all starch), and show the gluten. By crushing seeds of flax, sunflower, rape, between dry blotting-paper show that some seeds contain oily matter. What has become of these things in the seedlings? Suspend seedlings of various kinds so that only the root-hairs just dip into water. Note what happens after a few days.

Make solutions of salt, sugar, aniline, &c., in water; filter. Distil the solution of salt, and condense water again. What is left behind? What is found in the condenser?

Put some small growing plant through a split cork in a wide-mouthed bottle so that the roots dip into a solution of aniline. After an interval observe the leaves. Take six or eight large, healthy leaves; pass the petioles through three or four holes in each of two cards, and put the cards over two tumblers nearly full of water. After a short interval invert two dry empty tumblers over the cards; place one set of leaves in the sunshine, and one in a shady place. After ten minutes observe what has taken place. From which set of leaves has there been most evaporation?

Take a leaf from a young plant whose roots have been placed in water; put it back downwards on a polished metal surface, and leave it for a few minutes. What do you notice? Repeat the same experiment with a similar leaf, placed face downwards. Observe again. From which side of the leaf does evaporation take place?

[To show the existence of air.] Invert wide-mouthed bottle or tumbler full of water in water; invert another bottle or tumbler, apparently empty, below mouth of first. What passes from second to first bottle? Burn a candle in a lamp-glass with narrow top (i) with lower end open; (ii) with lower end closed. What happens in each case? Test the gas left in tube with lime-water. Also blow or breathe into lime-water.

Put two healthy young growing plants through split corks into bottles so that the roots dip into water; in one case allow free access of air, in the other shut off the air by sealing the cork with melted candle-grease. Observe the difference after a few days. Repeat the experiment, using garden-soil instead of water, and pouring the melted grease over the surface of the soil in one of the pots or bottles. Observe again. What do the roots require besides water?

Grow young seedlings of corn on damp paper. Mark the longest rootlet very carefully with a fine camel's-hair brush with India ink or purple ink by lines, say, $\frac{1}{4}$ in. apart, beginning at the tip. Keep the plants moist and warm, and notice which of the $\frac{1}{4}$ in. intervals increase in length, and which remain the same. Where is the growing point of the root?

Keep some of the growing seedlings or young plants without water; water others very occasionally; others, regularly; and to others again give large quantities of water, keeping the soil always completely saturated. Note the difference in growth after the lapse of, say, a fortnight. [The pots in which the seedlings are grown should be numbered, and a diary of all that is done should be kept.]

Appendix.

Observe the forms of the leaves of several plants. Note the veins. Is there a midrib, or are the veins parallel? Note the upper and under surfaces. How are the leaves placed on the plant?

Examine various buds. Note the bud-scales. Watch the growth of the buds; how do they grow? (By lengthening the distance between successive leaves.) Note the "eyes" of the potato; plant several "sets" of potatoes; also slips of geranium, heliotrope, leaf of begonia, &c.; likewise crocus-bulbs, iris, &c. Watch their growth. Note the rootlets, root-hairs, &c.

Rear various plants, those named above or others; place some of them in the school windows. Turn the pots round from time to time; do any of the leaves or stems turn round towards the light? Put some plants in a dark place, and others in the light; after a few days note the differences.

Take several young plants or seedlings—sow-thistle, oat, wheat, carrot, bean. Note the kinds of roots. Is there one main root, or are there several fibrous roots?

Note parts of flowers, several kinds of flowers; leaves, their veins, &c.; fruits; seeds and seed-vessels.

Take young saplings of oak or other trees. Cut the stem horizontally and vertically. Note inner and outer bark; sap-wood, heart-wood, and in some cases the pith.

Identify the chief wild plants found in the neighbourhood, including the chief weeds; the chief plants in cultivation in the district, including grasses; also the chief forest and orchard trees. Remark where possible their roots, buds, branches, flowers, fruit, seeds, &c.

Let the children keep diaries of phenomena within their observation: the date of sowing of various crops, of the appearance of the wheat, &c., above the ground; the dates of the appearance of buds of various kinds on trees.

Note the yield of various kinds of crops. Grow different varieties of wheat in different soils. Try varieties of other farm plants. Grow specimens of different grasses, &c. Note length of time from sowing to the various stages of the growth up to seeding.

Pour some water on dry sand hollowed out into a cup-shape; pour some water in like manner upon dry clay, then upon clay that has become saturated with moisture.

Take some garden-soil which has been dried as before. Crush it carefully, and sift it through muslin. Note what is left in the muslin. (Small stones and pieces of vegetable-stems.) Wash the sifted soil with pure water, pouring off the muddy water carefully into a bucket, after allowing the remainder to settle. Wash again and again until clear water only comes off. Examine what is left behind, and what has settled in the vessel into which the muddy water has been poured. (Clay.). What is left behind in the other vessels? (Sand.) What does the garden-soil contain?

Repeat the experiments with the subsoil.

Take some garden-soil; weigh it. Dry it by placing the vessel containing it in a vessel with water in it, and keeping the latter for some time at the boiling-point. Weigh it from time to time until it ceases to lose weight. How much water has been driven off? Take the dry soil; wash it well with pure water, and pour the latter off carefully so that the water poured off is quite clear. Dry the soil again. Has it lost weight? Why?

Collect and examine various insects, including the grubs, chrysalides, and the full-grown insects. Rear a few moths in boxes, noting the stages of development. Note the plants on which the grubs or caterpillars are found or feed. Note as far as you can the habits and the life-history of the various insects. Are they noxious or not? Do birds feed upon them; if so, what birds?

Use a thermometer to find the temperature of the air, of warm water, of the surface of the ground. Add half a pint of cold water to half a pint of warm water, observing the temperatures before and after mixing. Find the temperature of the steam over boiling water, and also that of a mixture of ice and water. Take readings of the thermometer twice or three times daily in the shade and in the sun, and, if possible, maximum and minimum readings.

There should be a few simple experiments to show the constitution of air, production of oxygen, burning charcoal in oxygen, testing product with lime-water, &c.; "soda-water"; coal-gas; ammonia, its solubility in water, &c.; composition of water; iron and iron-rust; the distinction between mixtures and chemical compounds; acids and alkalies, effect on litmus, on violet flower; comparative density of liquids; use of hydrometer and lactometer; solutions; emulsions; &c.

The work begun in S4 should be continued in the upper standards in conjunction with the school garden, small plots being cultivated by the individual children for the experimental illustration of the lessons taken within the school, and a somewhat larger plot for more extended experiments—*e.g.*, as to the effects of various modes of cultivation and of various kinds of common manures upon the soils found in the district, one row or ridge being devoted to each experiment.

ELEMENTARY HOME SCIENCE.

Where the circumstances of the school and the staff will permit, there should be a course of home science for girls; this should be founded upon individual observation, experiment, and practice by the girls themselves; it should have reference to the elementary facts and principles underlying the efficient management of a home. The following list of topics will afford material for the construction of a program in home science for girls of the Senior Division; in every school, however small, the girls of S5 and S6 should receive some instruction of this kind. In small schools one course embracing some elementary work in agriculture and some in home science may be drawn up.

LIST OF TOPICS.

Importance of personal and household cleanliness, of wholesome food and sufficient clothing, of fresh air and sunshine, of exercise, sleep, and good habits. Thrift, prudent outlay and judicious saving. Clothing, taste and suitability in dress, hygienic rules as regards clothing, physical properties and cost of materials, cheapness and durability, economic colours, best wearing textures, shoddy; errors in clothing, dangers of flannelette; care of clothes, brushing, removal of mud and grease stains. Treatment of simple injuries and ailments; what to do in case of fire. Methodical habits in home-management. Necessary furniture and its disposition; floor-coverings. Washing, scrubbing, sweeping, dusting, and polishing. Implements and materials used in those operations. Cleaning painted, stained, and varnished surfaces, and windows. Ventilation and warming of rooms; economic and wasteful grates; how to set, regulate, and clean a range; slacking a fire; different fuels; economy of fuel; how to light and keep down a fire; gas-fires and oil-stoves. Lighting; good light for the eyes; restful colours; effect of sunlight; comparison of candle, lamp, and gas and electric light; effect of lighting on air in room. Essential properties of a good lamp; devices for perfect combustion; dangers of impure paraffin. Precautions to be observed as regards heating and lighting rooms. Beds and bed-making; healthy and economical beds and bed-coverings. How to set a table; the care and cleaning of crockery, glass and silverware, and cutlery. Kitchen utensils; the materials of which they are made; the behaviour of these materials under heat and with domestic acids and alkalis such as vinegar and soda. Prevention of rust; use of blacklead. Mechanical action in cleaning of whiting, emery-powder, glass-paper, sand-soap, cinders, &c. Removal of grease; properties and uses of soap and soda and of common domestic solvents such as ammonia, turpentine, benzine, naphtha, and alcohol; precautions to be observed in the use of these agents. Different kinds of foods; objects and methods of cooking meat, fish, eggs, vegetables, cereals, and fruit. Principles on which culinary processes are based; action of heat on foods. Care and storage of food, with special reference to milk; care of larder; marketing; cost of foods; how to recognize defects in foods; adulteration of food. Suitable meals for children and adults. Properties and preparation of common beverages such as tea, cocoa, and coffee. Use and abuse of condiments in common use. Solution, melting, solidification, boiling, evaporation, condensation, crystallization, coagulation, and fermentation; action of yeast and baking-powder. Soups and broths, pies and puddings, scones, bread and cakes. The local water-supply, its source and distribution. Pipe, well, and rain water. Hard and soft water, pollution and waste of water, drainage, disposal of refuse, the use and action of disinfectants and deodorizers in common use. Implements and materials used in the laundry, precautions as regards their use. Washing, bleaching, drying, and ironing; washing coloured materials; paraffin washing; stains and their removal.

SINGING.

The following is the program recommended in singing. To suit the conditions of various schools a modification of this program, or, indeed, any other program, may be accepted, provided that it gives promise of securing a good vocal training, and conforms generally with the intentions of the regulations.

Preparatory Division.—(1.) Natural breathing and voice-training exercises. (2.) Cultivation of the sense of time and rhythm by means of

Appendix.

songs learned by ear. (3.) A beginning to be made towards learning the scale and common chord, using the tonic sol-fa syllables. (4.) The use of hand-signs. (5.) Simple ear exercises by imitation. 6.) Songs as closely related as possible to the subject-matter of the other lessons, nursery-rhymes set to music, action songs. All notes of the songs to be well within the compass of the children's voices. All singing to be soft and sweet from the outset, the aim in view being sweetness and purity of tone. The introduction of two or three minutes' singing at intervals during the day's work is recommended.

Junior Division.—I. Voice Training: Breathing and voice-training exercises practised regularly with a view to cultivation of good quality of tone and clear enunciation. Training the "headvoice" by singing, always softly, descending scales to the sound of *oo* in *coo*, and *o* in *ol* or *on*, using the scales E, E*b*, D, D*b*, C. Correct vowel sounds. Opening of the mouth, flattened position of tongue.

*[II. Musical Knowledge and Practice, Sol-fa Notation.—(*a*.) Tune: To sol-fa from the modulator and the hand-signs, exercises involving easy intervals in the diatonic major scale; singing at sight easy exercises. (*b*.) Time: To sing on one tone to syllable *lah* exercises in two-pulse, three-pulse, and four-pulse measures containing one, two, or more whole-pulse notes, half-pulse notes, and whole-pulse rests on the non-accented pulses of the measure; time-names. (*c*.) Ear-training: Tune, to give sol-fa names of phrases containing only the notes *d*, *m*, *s*, in any order; time, to give the time-names of easy exercises containing any of the pulse divisions given in (*b*).]

III. Songs.—Suitable songs in unison, for two equal voices, action songs, rounds, or catches. The greater part of every lesson should be devoted to the songs, through which a great deal of the musical knowledge may be approached.

Senior Division.—I. Voice-training: Breathing and voice-production exercises on the descending scale, using the syllables *coo, loo, aw, ah;* development of production of pure vowel-sounds and soft tone by sustained notes on the syllables *oo, oh, ah, ay, ee;* prevention of uses of the chest register; all loud singing discouraged.

*[II. Musical Knowledge and Practice, Sol-fa Notation.—(*a*.) Tune: Leaps on all the intervals of the scale, including occasionally leaps to *fe, se, ta;* singing at sight (passages occasionally including *fe, se, ta*), also passages containing simple transition indicated by bridge-notes. (*b*.) Time; Exercises with whole beats, half beats, quarter beats, &c.; time-names. (*c*.) Ear-training in time and tune; Sol-fa names of phrases containing not more than six consecutive notes; occasional introduction of *fe, se, ta*; time-names in easy exercises containing pulse-divisions in (*b*).

Staff Notation (optional): (1.) The staff; ledger lines, one above and one below; the treble clef. (2.) Letter names of notes and their positions on the lines and spaces. (3.) Shape-names, and time-values of notes from semibreve to semiquaver; corresponding rests. (4.) The major scales in the keys of C, G, F, D, B flat, A, and E flat. (5.) The time signatures $\frac{2}{4}$, $\frac{3}{4}$, $\frac{4}{4}$, $\frac{6}{8}$, and their accents. (6.) Expression-marks (cres., dim., rit., rall., allegro, adagio, andante, p, mf, f, D.C., D.S.). (7.) Use of tuning-fork. (8.) Translation, simple cases only—*e.g.*, in key C and E flat, from staff notation to sol-fa, and *vice versa*.]

III. Songs.—Suitable school songs, national and patriotic—in unison and in parts, rounds, catches, canons, and part songs. The greater part of every lesson should be devoted to the songs, through which a great deal of the musical knowledge may be approached.

NEEDLEWORK.

The following is the program in needlework to which the work of the school is expected, as far as circumstances permit, to conform; but a modification of the scheme, following similar lines of development, or any other scheme (presented in the form of a written program), may be accepted by the Inspector if it covers substantially the same range of work.

Junior Division.

S1: Preliminary exercises in weaving (simple), lacing, knotting, tying, measuring (foot rule). Stitches up and down through coarse perforated

* In schools where a full course of singing is not found practicable, the musical knowledge set out in Section II of the Junior and Senior Divisions above may be omitted, except in so far as it is required for voice-training and ear-training and for the proper learning and interpretation of the songs. In large schools, where music is made a strong feature, the teacher may be able to teach most of it without difficulty. In small schools almost the whole of the work that can be attempted will be made incidental to the songs.

material with wool-needle and wool or fine twine; tacking and over-casting.

Materials: Raffia, flax, macramé, coarse canvas, flannel, wool. Tools: Bodkin, wool-needle, foot rule, thimble, and blunt-pointed scissors.

(Some of this work may be done in P classes if desired.)

S2: Further use of the needle and thimble. Blanket-stitch, cross-stitch, running, hemming, weaving (canvas for woof); cutting and tearing material.

Materials: Canvas, flannel, and dowlas. Tools: Thimble, short coarse needle, tape-measure, scissors.

In both classes all stitches taught are to be applied in making articles for school or personal needs. The following are suggested examples of suitable articles from which a selection might be made at a stage not higher than S2 in application of the stitches: Book-cover (blanket-stitch); book-marker (blanket-stitch and weaving); pen-wiper (cross-stitch); wall-pocket (cross-stitch and weaving); sewing-bag (running and hemming); duster, lunch-cloth, towel, &c. (hemming).

Senior Division.

S3: Seaming, over-sewing, running, and felling. Study of beginning and finishing work; of the right and wrong sides of materials. Tucking, gathering, button-hole stitch. Articles suitable to this stage to be cut, fixed, and made by the children.

Suggested examples for selection: Handkerchief (hemming—smaller stitches than in S2); handkerchief-bag (over-sewing, running); work-bag (running and felling, hemming and cross-stitch); doll's pinafore (running and felling, hemming, tucking); puff-bag (gathering); linen d'oyley or small tray-cloth scalloped with button-hole stitch.

S4: Study of selvedge and crossway of materials, especially of calico. Gathering, stroking, putting on band, back-stitching in short lengths. Making fastenings—tapes, hooks and eyes, buttons and button-holes, loops and eyelet-holes. Plain darning as for weak places. Articles suitable to this stage to be cut, fixed, and made by the children.

Suggested examples: Pillow-slip (work of S3 and taping, or buttons and button-holes); needle-case or housewife with back-stitched compartments; doll's petticoat (gathering, stroking, putting in band, taping); wall-pocket (work of S3 and making eyelet-holes); collar (cross-stitch, button-holing, hook and eye).

S5: Pleating, putting into a band, taping corners, herring-boning. Mending (including darning and patching): children to be encouraged to mend actual garments. Lessons in cutting out garments from diagrams or paper patterns. At least one small garment to be finished.

Suggested examples: Cooking-apron and cuffs, chemise, girl's overall, child's pinafore, petticoat, or first drawers.

S6: Review of all stitches learned, further practice in mending. Folding, cutting, placing, and use of cross-way strips. Study of placing, cutting, and putting together patterns. At least one small garment to be finished.

Suggested examples for selection: Simple undergarment, child's frock (print, holland, or linen), bathing-suit, skirt, blouse designs worked on collar and cuffs or on table-linen.

For the purpose of reinforcing the children's interest in their work and widening their outlook it is recommended that, as opportunity offers, the instruction in needlework should be accompanied by and intimately associated with talks on kindred topics such as the following, having in especial a direct bearing on household economics: thus,—

Junior Division.—Care of materials and tools; source of materials neatness in dress; colour; care of clothing; use and design of articles made; making of textiles; primitive weaving.

Senior Division.—Use of sewing; colour with regard to dress; dress for different seasons, &c.; raw materials and their processes of manufacture; relative cost in general of fabrics in common use; good and bad materials; good taste and economy in dress; harmony in colour and texture; health and clothing; choice of materials, styles and colours; folding and general care of clothing; shopping, &c.

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