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# Course of Study

FOR THE  
**VILLAGE AND  
RURAL SCHOOLS**

OF THE  
State of Colorado

ISSUED BY  
**KATHERINE M. COOK,**  
State Superintendent of Public Instruction



Denver, Colorado  
The Smith-Brooks Printing Co., State Printers  
1910

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**STATE AGRICULTURE COLLEGE**  
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# COURSE OF STUDY

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STATE OF COLORADO  
DEPARTMENT OF PUBLIC INSTRUCTION  
DENVER

**FOREWORD.**

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This handbook has been arranged for the guidance and convenience of the teachers, pupils and patrons of the Colorado schools. To the teachers and pupils it is intended to be suggestive rather than mandatory, and represents the minimum requirements of the work.

Every possible liberty is allowed with regard to methods, and teachers are urged to use their own individuality, judgment and common sense to meet the conditions with which they are confronted. Try to accomplish results by what seems to you the method best adapted to your particular problem. Select the best from any and all methods at your command.

These outlines are not detailed statements of all that should be and may be accomplished by the teachers and by those responsible for the management of the schools. The outlines of work for the different grades are intended simply to set forth in a general way the essentials of the work to be done, with the view of unifying the combined effort of teachers and supervisors. As remarked by another, "the best work is done while keeping in the proper perspective the work of previous years in the child's course and the plans and needs for his succeeding years."

Any teacher who follows this or any other course of study mechanically will fail. The material outlines in this course must first become a very part of the teacher's thought and feeling, if she would succeed in presenting it to her pupils.

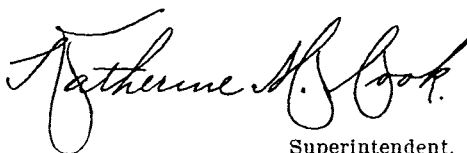
In the preparation of this course of study the superintendent has tried to profit by the experience of rural and city teachers, superintendents and educators who could be inveigled into offering advice or suggestions. A great many state and city courses

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of study have been carefully studied and some ideas which seemed best have been freely adopted.

It is sincerely hoped that this course of study will help to raise the educational interests of Colorado to a higher plane of usefulness and efficiency.

The main purpose of this course of study is to point the way. No attempt has been made to include all that should be taught. On the other hand, some schools may not now have the facilities to follow every suggestion offered. This course, therefore, is to serve as a working basis and much depends upon the resources, the enthusiasm and the attitude of the teacher in giving it a living existence.

A handwritten signature in cursive script, reading "Katherine M. Cook". The signature is written in dark ink and is positioned above the printed name.

Superintendent.

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## GENERAL SUGGESTIONS FOR TEACHERS.

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Many country and village schools in eastern and middle states have practiced combining classes to reduce the number of recitations. Alternation is the systematic and regular union of two grades of pupils on consecutive years of work, both grades doing the work of one year in one class, while the other year's work is entirely omitted. The next year, the work omitted is taken up and the first year's work dropped. By this plan each pupil does all the work of the course, but not in the same order, while the number of classes is diminished.

Every school should have a day or half a day set apart for the exhibition to parents and visitors of its best work. The people of the district furnish the money to support the school and they have a right to see and to know what the results are. Historical papers, analyses of sentences, maps, arithmetical solutions, examination papers of all kinds, drawings, specimens of plants and animals, home-made apparatus to illustrate physics, lists of spelling, of diacritical markings, all of these and more in an infinite variety, can be ranged on the walls, on the blackboard, on the desks, and displayed for the inspection of visitors. Good work done during the year can be preserved for this day. Any teacher who can in this practical and real way show his patrons the honest results of his labors can not fail to secure their esteem and respect. The last day of the school is an appropriate time for such an exhibition of school work.

If trouble occurs with any child, or if there is danger of any, visit the parents and secure their co-operation. Many difficulties and misunderstandings may be averted by judiciously referring irregularities or misconduct to parents. The school and the home should be in closest touch and sympathy.

There should be silence in the schoolroom—a serene and soothing quiet; but it should be the quiet of cheerfulness and agreeable devotion to work, rather than the palsy of fear. "There is," says Page, "such a thing as keeping a school too still by over-government."

Do not talk in a high or excited key. Avoid fault-finding and scolding. Do not talk too much.

Study variety. Do not do things always in "the same old way." Vary the opening exercises occasionally and have different ways of reciting.

Be careful about your own pronunciation and use of language. See that everything about your dress, desk and school-room is always in perfect order, and so far as possible in good taste.

Be kind, but firm. Carry out all directions that you may give. Insist upon exact and prompt obedience, but do not make threats or rash promises.

Remember that the chief aim of all school discipline is to train children in the habits of self-control and self-direction.

Remember, also, that the public schools are not supported for the benefit of the superintendent, the principals or teachers. The schools belong to the children.

Have your program in a conspicuous place and follow it, even when the superintendent visits your room. He is not looking for show classes, but regular every-day work.

Have patience—give slow pupils time.

Do not frown perpetually at the children, and do not talk too much. Let the children do the talking.

The teacher's enthusiasm and interest should make every lesson attractive.

The processes of teaching should conform to the order and laws of individual growth.

The first presentation of a new subject should be made with objects; and all teaching, when possible, should be largely objective.

Teaching should proceed first by analysis, and then by synthesis, particularly so in older grades.

Teaching should be first inductive; then deductive.

The contents of the learner's mind should be brought to adequate expression.

Teaching should show constantly some use of the thing taught.

Good teaching seeks to keep in contact with the learner's interests; and when these are exhausted, new interests should be created.

All modes of formal education—everything that the teacher does—should afford the learner the best models.

There should be frequent repetition of principles, processes, and forms of expression.

Teachers should know thoroughly and familiarly whatever they attempt to teach, and they should also know just how they intend to teach it. In other words, there should be no aimless teaching—there should be a definite, inspiring plan for everything.

It is confidently expected that every teacher will read the books adopted by the Reading Circle board. They are carefully selected with a view to the needs of the teachers engaged in this state, and should be a part of your working library.

No teacher shows the right spirit of loyalty to her superintendent, or interest in her profession, who fails to attend teachers' meetings and institutes. These are planned by the superintendent with a view to the needs of the particular locality in which you are engaged, and attendance on them is an essential part of your work.

Do not fail to encourage pupils' reading circle work in school. When money from any source can be obtained for books, use the library list furnished by this department.



## READING.

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### GENERAL SUGGESTIONS.

1. The mechanical processes of the instruction in reading are fundamental and can not be omitted, but they should be kept within their proper limits, and the fact not be lost sight of that they are only a means to the higher ends of the reading course. Mechanical reading is not good reading and has no recognized place in school.

2. Reading is the most fundamental of all subjects, since ability to get the thought from the printed page is a condition of progress in other subjects. It is this fact which makes thought-getting the most important aim of the reading class. The work in reading stands in close relationship to most other subjects of the curriculum, supplementing them and being in turn illuminated by them in a great many ways. The apt teacher will not neglect these opportunities for correlation.

3. It is through the reading that the pupil makes his acquaintance with choice literature and lays the foundation for literary taste. Later in the works of the best novelists, dramatists and poets he may look abroad into the world of time and place, upon an infinite variety of social conditions and see directly into the inner thought and motive, the very soul of people.

#### Developing a Taste for Beauty.

One period a week should be devoted by the teacher or thought to reading to her class in her very best style, and afterwards discussing with them, some bit of fine poetry, in which the thought, imagery and expression are such as will appeal to the child's sense of beauty and stir his emotional nature.

#### The Relation of Reading to Phonics.

Phonics is not reading. Reading is a study of the meaning of printed sentences; phonics is a study of the sound of printed words.

It is sometimes objected that the child trained in phonics reads mechanically. This can only mean that such a child has had bad training in both reading and phonics. It is true that the child expert in phonetics knows too well that particular phase of the pronunciation of words, that he can pronounce words which are beyond his comprehension. But the teacher is much at fault.

if he is ever allowed to do this. In reading lessons the teacher should think of nothing else except seeing that the child gets the meaning of the printed page. The main ultimate purpose of the reading lesson is to enable the child to sit down quietly by himself and get the meaning of a book. The primary use of phonics is to train the ear and the vocal organs in niceties of speech. Its second use is the pronunciation of printed words.

### FIRST GRADE.

*Phonics*—Teach phonics in connection with words giving the initial consonants first, because:

- (a) Most consonants have only one sound.
- (b) The first letter of most words is a consonant.
- (c) When a child has the first sound of a word he has a good start toward pronouncing the whole word.
- (d) Phonograms.
- (e) Short and long vowels.

*Reading*—Beginning reading is taught from the board. Sometimes write such words as "hop," "skip," "jump," having the children express the thought represented by performing the action. Again, tell a story up to the most interesting point. While the interest is intense write a short sentence on the board giving this point. The child reads because he wishes to get the thought, making *meaning* the aim of reading from the first.

When a word has been taught from the board the class should find it in the new lesson. This is recommended in place of the protracted word drill from the board.

#### *Seat Work Related to Reading:*

1. Sorting words or letters.
2. Matching words to words, or words to pictures.
3. Making words from letters.
4. Building words upon a given phonogram.
5. Building words with the same initial consonant.
6. Finding the new words in boxes.

For additional seat work we suggest: "Waymarks for Teachers," by Miss Sarah L. Arnold; Silver, Burdett & Co.

*Books and Vocabulary*—The books selected for a class of beginners should possess these features:

1. The vocabulary must consist of familiar words.
2. It must not be too extensive.
3. New words must not be introduced too rapidly.
4. Each word will be used many times over and in successive lessons.
5. Sentences will be short, familiar in form, and usually completed without breaking the lines.

The close of the year should find the pupil familiar at sight with a vocabulary of several hundred words, and able to read with a degree of readiness from any primer or first reader of ordinary difficulty.

Among the many excellent books now on the list for use in the first grade, the following are of conspicuous merit:

"Finch Primer," "Primer of Work and Play," "The Sunbonnet Babies," "Overall Boys," Book 1 of these series: Jones, Brooks, Blodgett, Heath, Silver-Burdett, new edition of "Stepping Stones," "Lights to Literature," Cyr.

### SECOND GRADE.

This class is capable of more independent work, and a limited amount of seat preparation of the lesson will be required. Before the reading of the lesson in class there should be a lively discussion on the lesson in general—the people, the incidents, etc. Question for thought whenever this is not clear.

*Books to Be Read*—As one important aim of the year's work is a mastery of the mechanics of reading, the number of books read should be large, but the reading not too difficult. Too difficult reading is fatal to thought getting.

*Books Suggested*—"Reynard, the Fox," "Cyr Dramatic First Reader," "Lights to Literature," "Folk Lore Reader No. 1," "Stories of Ulysses," "Eskimo Stories," "Big People and Little People of Other Lands," "Cyr Advanced First Reader," "Bow-Bow and Mew-Mew," "Mother Goose Village," "Tree Dwellers," "The Early Cave Men," "Children of the Cliff," and "Lodrix." "Finch First Reader," "Wiltse's Folk Lore," "Stories and Proverbs."

### THIRD GRADE.

In this grade the study of the lesson should prepare the child to give a pretty definite account of its substance, if not independently then in response to the teacher's questions. The wider the range of questions, the more stimulating the exercise, the keener the interest, the better the expression. Seek to encourage the dramatic instinct. In the third year the child's interest is best held by the long story or by a series of stories in which the same characters appear. Easy reading need not be sought, as a child in his eagerness reads on to find out what happens next.

*Books Suggested*—Cook's "Story of Ulysses," Brown's "In the Days of Giants," "Geographical Readers," "Fables and Folk Stories," Scudder's "Book of Legends," Scudder's "Fifty Famous Stories," "Aesop's Fables," "Book of Nature," "Myths," Holbrook, "Seven Little Sisters," Cyr "Graded Art Reader No. 2," "Art Literature Readers."

**FOURTH GRADE.**

The dictionary should be used for pronunciation, spelling and meaning of words. Test the child's understanding of a word by his ability to use it. The assignment of reading work should be carefully made and interest in the content should be created before the study period.

*Books Suggested*—Standard readers—literary, historical, biographical.

At the end of the fourth year the child should have the ability to read with pleasure and profit literature suited to children from nine to twelve years of age.

**FIFTH AND SIXTH GRADES.**

All the lines of preparation suggested in the lower grades should be continued to the end of the course, with increasing thoroughness and a wider range of supplementary work. The encyclopædia, the dictionary and other books of reference should be in constant use.

The discussion of the reading matter should aim to bring out such points as the following:

(a) Facts concerning the author and the book from which the reading is taken.

(b) The thought and purpose of the writer in connection with the book or passage.

(c) The pupils encouraged to note beauties of thought and style, peculiar expressions, etc.

**SEVENTH AND EIGHTH GRADES.**

The work of these two years should be largely a study of literature and authors. Study writers and the works of each in groups, noting characteristics, similarities, differences.

Study words as to derivation, use and pronunciation.

## SPELLING.

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Spelling should receive as much attention as any other subject and be continued through all the grades. Teach the children to pronounce and spell difficult words in all the lessons.

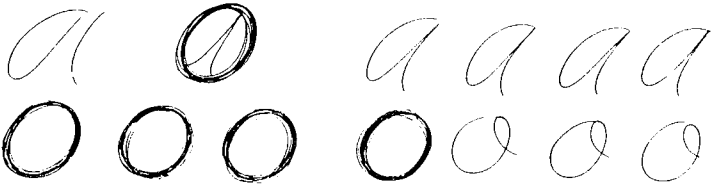
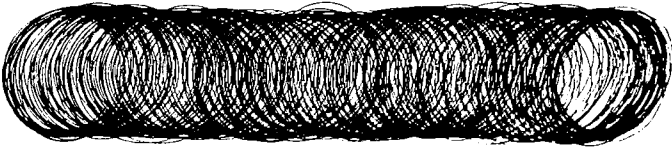
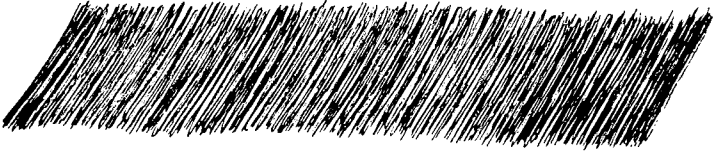
Correct pronunciation is as important as correct spelling. Distinct articulation is a most noticeable sign of culture.

Give particular attention to words which are most familiar and most commonly used after leaving school.

Pupils should be expected habitually to spell correctly.

It should be remembered that some children may be eye-minded, some ear-minded and some muscle-minded, and that oral and written spelling and clear enunciation are all equally necessary.

Spell all words in readers in the first four grades. If this is not sufficient material for fifth grade introduce a spelling book. The use of words in sentences should form an important part of the work.



Courtesy of J. E. HUTCHINGS, M. C. S., Denver

## WRITING.

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In the first two grades but little attention should be given to movement. In these grades especial attention should be given to blackboard writing which requires the full arm movement. Writing with pen and ink should not be required or allowed in grades one and two. All seat work requiring writing should be done with soft pencil. Too much emphasis can not be given to neat written work which the children are to see or copy. Attention to neatness in the first two grades will accomplish more than a great deal of drill in the other grades.

In grades three, four, five and six some children will be found who have formed careless habits in writing as in other subjects. To correct these habits should be the first concern of the teacher. The object to be attained is *legibility*. The children should take pride in neat written work. It may be a good plan to have regular periods until this spirit is aroused in the members of the class or school. When such periods are given they should be at a time when the pupils are fresh (see Bagley's *Educative Process*). Careless habits are often formed and persisted in because the teacher demands rapid work. If neat, legible writing is desired or expected, a reasonable amount of time must be given to dictation, examinations and other written exercises. Speed in writing will come with practice.

If children were properly taught in the first six grades there would be little need of attention to writing in the seventh and eighth grades. In many cases it will be found that the seventh or eighth grade pupil does not need to give time to learning how to write. All such cases should be excused from the drill period in writing, and others should be excused as soon as they attain a legible, neat style; but no child should be allowed to leave the eighth grade until he has passed from his crude, baby powers with the pen or pencil. Patient, persistent and insistent efforts will bear fruit in this as in other subjects. It should be remembered that it is not perfection in any system of writing that we are seeking, but neatness and legibility in the child's own writing. The child's individuality must be preserved and trained here as in other school activities.

## LANGUAGE.

### GENERAL SUGGESTIONS.

The chief aim in the study of language and grammar is the mastery of the mother tongue, since a fluent and rich vocabulary is a choice inheritance. For this reason much attention should be given oral expression.

Faults in speaking are best improved and overcome by rousing in the individual a proper pride in a good command of language, rather than by constant nagging at his deficiencies: upon no occasion is it more true that example is better than precept than is the case of a teacher's use of English before his class. Too much can not be said about the use of pure English by the teacher at all times.

An excellent booklet, "The Dictionary Habit," by Sherwin Cody, may be secured, upon request, from the G. & C. Merriam Company, Springfield, Massachusetts.

### FIRST GRADE.

Encourage oral expression in the beginning by having children learn to repeat and dramatize stories told by the teacher in his best and most enthusiastic style. Remember that the great pleasure in the story to a young child is frequent retelling, and, also, continued repetition of phrases or words, as: "Dog, dog bite pig," etc. For this reason "The Three Bears," "Little Red Riding Hood," "Epaminondas and His Auntie," "Little Half Chick," and many of Aesop's Fables are good.

Memorizing of short poems from Riley, Field, Stevenson, Helen Hunt Jackson and Jean Ingelow will do much to increase the child's vocabulary. Do not allow a sing-song chant, but insist upon having him *talk* his poem. Give the slow, dull child an equal opportunity with the more spirited one, even though at first he may seem to use more than his allotted time.

### SECOND GRADE.

Continue the work of developing expression by use of stories and the observation of common things in nature. The teacher should require answers that necessitate the use of complete sentences in replying to his questions. Illustrate the use of verbs by *action*. Distinguish between "lie" and "lay," "sit" and "set," "bring" and "take," etc., in this manner.



Have little or no written work as yet, except a few short exercises in copying and dictation for the study of punctuation. (These exercises should always be returned to the pupil for correction and explanation.) Teach "September," by Helen Hunt Jackson; "The Children's Hour," by Longfellow, and "Seven Times One," by Jean Ingelow.

### THIRD GRADE.

Why not begin at this grade to eliminate from the language of the coming generation such impure expressions as "he don't," "don't she." etc. Analyze the separate words contained in the contractions, and show the impossibility of such forms. Drill on questions and answers involving these forms. "With Pencil and Pen," Sarah Louise Arnold.

Drill on clear enunciation, particularly to avoid dropping the final consonant, as "and," not "an'"; "going," not "goin'"; also in the use of "them," not "'em," and "have to," not "gotta."

Teach "The Night Wind," by Field; "The Sandpiper," by Celia Thaxter, and selections from "Hiawatha," by Longfellow. Study the biographies of the writers whose works have been learned, and have short written biographical sketches.

### FOURTH GRADE.

Give many exercises from this time on in oral description; use pictures, poems, imaginary journeys, incidents of daily life and familiar places, etc. Discrimination in the use of words should be emphasized.

Begin social letter writing, with particular care as to punctuation and arrangement.

Teach verb forms commonly used by the pupils themselves, constantly drilling on the correct use of the present, past and future tense. Emphasize the fact that "has," "have" and "had," also "is," "are" and "were" are always used with the third form and never with the second.

Teach "October's Bright Blue Weather," by Helen Hunt Jackson; "Paul Revere's Ride," by Longfellow, and "Sir Robin," by Lucy Larcom. Read the "Pied Piper of Hamelin," commenting upon the fluent use of adjectives.

### FIFTH GRADE.

Teach business letters. They should be short, concise and carefully punctuated.

Copy parts of conversational selections for the study of punctuation and capitalization. Lead pupils to discover why and when certain marks are used.

Begin study of personal pronouns by drilling on "It is I," "It is she," "To whom was it given," etc.

Study the use and abuse of "nice," "awful," "funny," and to avoid the wrongful interchange of "student-scholar-pupil," "people-persons," "learn-teach," "can-may," "may-shall." Give special and continuous instruction in the use of the dictionary.

Teach "The Arrow and the Song," by Longfellow; "My Native Land," by Scott; "Robert of Lincoln," by Bryant; "The Village Blacksmith," by Longfellow, and "To the Fringed Gentian," by Bryant.

#### SIXTH GRADE.

Teach such business forms as receipts, statements and cheques.

Drill on punctuation marks.

Write short memory gems for the study of indentations of lines, capitalization and rhyme.

Original stories and composition: What could be seen in the joyous land of the Pied Piper; what the robin saw in his trip to the Southland; plan improvements for school yard and school house; benefits to be derived from absolute accuracy and love of truth; description of Rosa Bonheur's "Horse Fair."

Explain and drill on the misuse of the double negative. Watch carefully for such faults as "had of," "had ought," "different to" and "different than," but drill only with individuals who make such mistakes.

Teach "To a Water Fowl," by Bryant; "Abou Ben Adhem," by Leigh Hunt; "The Concord Hymn," by Emerson, and "The Lark and the Sun," by George McDonald.

#### SEVENTH AND EIGHTH GRADES.

Begin technical grammar in this grade. Follow the outline of some standard text. Always remember that the definition is the bedrock of etymology; therefore teach definitions thoroughly and apply constantly.

Emphasize composition work in both grades. Suggestive subjects: Newspaper report on the crops in the locality; Christmas shopping trip; the discipline which results in voluntary obedience to just regulation; description of Jules Breton's "Song of the Lark;" minutes of a meeting of an imaginary club.

## ARITHMETIC.

### FIRST GRADE.

Very little formal work.

Facts concerning number relations presented and acquired informally. Young children need work very little with pencil and paper—largely mental and oral.

Written work should come after reasoning power is developed and the child is mentally able to solve problems.

*Less seat work in numbers.*

Count, compare, visualize simple combinations.

Judgment of relative magnitudes.

Create definite ideas—do not present things as isolated or absolute in themselves.

Teach relations by comparison.

Teach Roman numerals as needed in the different grades.

Count and write to one hundred.

Fundamental operations under ten, i. e., addition, subtraction, multiplication and division.

$\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$ ; lines; foot rule; pint and quart; days of the week; names of months; cutting and folding; constructive games.

Signs + and - actively used, i. e., to indicate what the child is to do with a given group of things.

Concrete problems.

### SECOND GRADE.

Continue games; utilize play interest; count and write to two hundred; operations to twenty; addition and subtraction tables memorized.

Simple fractions needed in daily activities. Approach fractions in an active or dynamic way by considering denominator as indicating the number of parts into which a given group of objects may be cut by the child, and the numerator as the number of these parts used or taken. (See O'Shea's "Dynamic Factors in Education.")

Count to one hundred by twos, threes, fives, etc.

Constant review of first grade work.

Correlate with everyday experience in other studies.

Original problems from pupils—pint, quart, gallon; minute. hour, day; inch, foot, yard; cent, dime, dollar.

### THIRD GRADE.

Complete multiplication tables.

Division in connection with multiplication.

Simple fractions in the same connection.

Read and write to one thousand.

Much review.

Observe and compare.

Many original problems. Work should be mainly oral. Problems from child's interests and experiences.

Addition and subtraction, three orders.

Simple fractions,  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$ ,  $\frac{1}{6}$ , etc.

Have signs  $\times$  and  $\div$  thoroughly understood. Teach all signs used in arithmetic as commands to do certain things to a given object or group of objects.

Emphasize the difference between partition or separation problems in division, and, comparison or measurement problems in division. For example: a problem in which the divisor and the dividend are not of the same denomination is a problem of partition or separation; a problem in which the divisor and dividend are of the same denomination is one of comparison or measurement.

### FOURTH GRADE.

Use a text book in this grade. (Study the text and preface to the text and cover the work suggested for this grade.) New topics should be taken in advance of text book assignments. The book should *supplement* class instruction.

If the child cannot solve the problem do not explain—give an easier one of the same kind. Find something he can do and lead him over the difficulty.

Constant review.

Much drill in this grade.

Free use of practical problems in the child's experience: actual purchases for the home; trades about which the child may know the conditions; playing store; etc. These furnish material to use in the arithmetic work of this and previous grades.

Insist on accuracy.

Division by two-place divisors. Much practice in long division is necessary.

At the end of the year pupils should be fairly proficient in multiplication, division and the operation of simple fractions.

#### FIFTH GRADE.

Work of the fifth grade continues along the same lines as the fourth, with more difficult work, especially in fractions and denominate numbers.

Ratio, percentage and decimals introduced in terms of common fractions as already understood. The sign  $\%$  indicates that something has been cut into one hundred parts; the number before the sign indicates the number of the one hundred parts that are taken.

Meaning of fractions and operation of fractions—terminology learned as far as needed.

Reduction, multiplication, division and cancellation.

Emphasize speed, correct form and accuracy.

Most of the drill necessary in addition, subtraction, multiplication and division should be completed in this grade.

Practical problems in measuring, computing capacity, etc.

Read the preface to the text for this grade and complete the work recommended.

#### SIXTH GRADE.

Take up advanced text.

Pupil should be taught to test his work, never to rely on answer in text book. Insist upon clear cut explanations and accuracy in the use of mathematical language.

More advanced work in decimal system; fractions, including cancellation, factoring, reduction to lowest terms, multiplication and division.

Measurements, weights and measures.

Simple problems in interest, discount and commission.

Practical problems in land, including the knowledge of section, township, range, etc.

Read the preface to the text for this grade and complete the work recommended.

**SEVENTH GRADE.**

The aim in this grade is to enlarge the knowledge already obtained.

Review decimals and fractions; get command of percentage and applications thereof.

Practical problems in business—taxes, money transactions, population, area, school enrollment and daily attendance, etc., dealing with local environment.

Much mental work.

Make the farm the center of interest in all lines of work in rural schools. Do not confine percentage to money problems.

Compound interest, partnership, square and cube root, and other subjects of minor importance should be omitted, especially in schools having short terms.

**EIGHTH GRADE.**

The aim of arithmetic is not merely to give expertness in mathematical processes, but also to lead the student to consider quantitative relations in his environment, develop mathematical sense so as to proportion means to an end in practical life. Class is a place for instruction, not lesson hearing. The principal use of the text book is to furnish *added* problems after local problems are exhausted.

Put time on the fundamental and important things:

1. A thorough review of common school arithmetic.
2. A practical knowledge of farm and simple store accounts.
3. Things which the teacher discovers it is necessary to emphasize.

Much review of the most important parts of seventh grade work.

Land surveying, construction, cubic measure, lumber measure, longitude and time, coinage and actual use of and familiarity with bank books, cheques, receipts, etc.

It is urged that in all grades children be taught to make a judgment as to the probable answer before beginning the details of solution. Drill much in quick estimate by the use of ten and multiples of ten.

## GEOGRAPHY.

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There is no subject in the elementary curriculum which has in it greater opportunities for the wide-awake resourceful teacher; nor is there a subject in the curriculum in which it is easier to do indifferent, worthless work than in the subject of geography. In making a course in this subject there is a great temptation—as, indeed, there is in making courses for all subjects—to break away from the limits prescribed by school texts. While this has been done in many cases in the following outlines, especially the work recommended for fourth grade, it is, nevertheless, recognized that it is much easier to *write* courses of study than it is to *carry* them out in the classroom. Consequently it has been thought best to present such courses as can be given with the ordinary text on this subject as the chief source of information.

There are many avenues through which to approach the study of geography. The commercial or trading interests of a people furnish one of the best means for the study of the geography of the country in which such people live. The topography of a country as a determining factor in the industrial activities of a given section is also an effective way to present some excellent lessons in geography. Imaginary journeys are worth taking. Collections of objects, however trivial, from sections of our own country and from other countries are worth making—pictures, post cards, stamps, coins, etc.

Against the above and other equally valuable means of teaching geography, we are often confronted with the temptation to use the text book exclusively, asking the questions verbatim as the would-be helpful geographer printed them. So rich are the sources to make the geography work worth while that one who does not take advantage of them is unjust to both his pupils and himself. Railway maps and descriptive material, which may be had for the asking, are valuable. Geographical readers are cheap and plentiful. Commercial clubs in all large cities furnish material of value about their sections of the country. Often one may secure exhibits showing how flour is made, how needles are made, how silk is made, and a number of other interesting industrial exhibits.

As a means of arousing interest, and as a means of convincing the children of the reality of things, the outdoor map is

highly recommended. Such a map may be made by placing an ordinary map on the ground and placing a stick as near the center of the land area to be represented as possible. Then measure from the center to various points on the periphery of the land area. Place small sticks to mark each measurement. If the ground map is made ten times larger than the paper map, each measurement must be to scale. When the measuring is done, lines connecting the several sticks will give a good outline map of the area to be represented. Ground maps are recommended for all grades. Geography should be taught in the first three grades, in connection with the nature study course. Geography, as a study of nature in the broadest sense of nature study, should be a prominent feature of the work in each grade.

Study Colorado, giving emphasis to the following:

- |                                  |                        |
|----------------------------------|------------------------|
| a. Irrigated section.            | g. History.            |
| b. Mining section.               | h. Climate.            |
| c. Stock raising.                | i. Plants and animals. |
| d. Mountains and larger valleys. | j. Government.         |
| e. Lines of railroads.           | k. Education.          |
| f. Cities and important towns.   |                        |

See industrial map of Colorado, inserted in back of this pamphlet.

Material for the work on Colorado may be obtained from the Colorado State Board of Immigration, State Capitol Building, Denver; from the several commercial bodies in the state; from irrigation, railway and mining companies. Many schools have children in them who, by reason of having traveled or lived in other parts of the state, can give excellent information. The above sources of information will be supplemented by the teacher's own knowledge of our state. No teacher can afford to be meager in her information along this line. Have children make many maps of Colorado, on paper and in sand.

#### FOURTH GRADE.

Consider geography a nature study subject. Make observations relative to change of seasons, effect of water, winds and frosts on rocks and soil. Study watersheds and river systems, which may be found in miniature near the school house. Have children make maps on the school grounds or school sand table, thus illustrating an isthmus, a cape, an island, a bay, a gulf, etc., etc. Read all of the introductory part of the elementary text in the geography, and as much of the discussion of North America as time will permit. Some teachers may find it advisable to have this reading done during the period for reading.



**FIFTH GRADE.**

1. Continue to study, by observation and experiment, the earth-changing forces. Complete the study of North and South America as given in the elementary text. Whenever time or opportunity will permit do supplementary work. Emphasize the following in the study and review work on North and South America.

- a. General outline of the continents.
- b. Mountain systems, slopes and basins.
- c. Chief industries.

At the close of the year the children should be able to make from memory a good sketch map of the continents of North and South America, showing general outlines and physical features and industrial sections. The making of sand maps will greatly aid in this work.

2. Make as concrete as possible a study of the industries. Small exhibits and maps whereon are placed the chief products of a given section are valuable. By imaginary journeys, much supplementary reading, picture study, letter writing and other means try to make the study of the Americas profitable and pleasurable to the children.

3. Read the work on Eurasia given in the elementary text. Make sand and sketch maps. Do as much supplementary work as time will permit.

**SIXTH GRADE.**

1. By observation, experiment and supplementary reading study the forces that are constantly changing the earth's surface. Current events should receive constant attention.

2. Complete the introductory part of the advanced book in geography. Emphasize the following:

- a. Movements of the earth with reference to the sun.
- b. The earth's structure.
- c. The forces which have caused the earth's surface to appear as it does.
- d. Winds as related to rainfall. Effect of these facts on large earth areas.

3. Review North and South America as presented in grade five.

4. Complete the study of the United States as presented in the text. Emphasize the following:

- a. Physical features.
- b. Large industrial areas.
- c. Trade and industrial centers.

5. The study of the several states with reference to a, b, c will greatly aid to make essential geographical facts and principles peculiar to industrial states clearer to the children. Make this study profitable, real and pleasurable by imaginary journeys, supplementary reading, current events, sand and sketch maps, history, stories, pictures, museums, and all the means which will present themselves to the alive, alert teacher.

#### SEVENTH GRADE.

1. Review—
  - a. Movements of earth with reference to the sun. Present zones as a result of these movements.
  - b. The forces that are at work changing the earth's surface.
2. Present the idea of evolution with reference to the changes through which the earth has passed and is passing.
3. Study the oceans as commercial highways.
4. Study the countries north and south of the United States. Emphasize—
  - a. Physical features.
  - b. Industrial areas.
  - c. Trade and industrial centers.

Owing to recent mineral and agricultural developments in Canada and Alaska much valuable material may be secured from sources previously named. The Panama canal furnishes an excellent avenue through which to arouse interest in Central America. Imaginary trips into Mexico will prove fruitful.

5. Study South America as prescribed in the more advanced texts. Make many outline, physical and industrial maps of the continent, and study climate in relation to prevailing winds and physical features. Study the people in light of history. Geographical readers will prove of special value in the study of South America.

6. Study Eurasia, Africa and Australia as presented in the advanced texts. Do as much supplementary work as time will permit. The material for such work is so plentiful one must make selections. This is especially true of geographical readers. Try to get a clear notion of the larger physical, social and industrial facts peculiar to these continents. Do not think that because the children are older they will not enjoy imaginary trips through these wonderful countries. Take advantage of magazine articles and newspaper clippings, collected by teacher and pupils, to make the dry pages of the book alive and significant.

7. By constant reviews of the essential features of the work of this and previous grades try to make the work of this grade result in a comprehensive view of the world as a unit. Through emphasis on trade relationship try to lead the children to see the interdependence of peoples.

References: "Chance's Little Folks of Many Lands," Ginn & Co.; "The Jane Andrews' Series," Ginn & Co.; "Carpenter's Geographical Readers," American Book Co.; "Little People Everywhere Series," A. Flanagan Co.; "Allen's Industrial Studies—United States," Ginn & Co.

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## HISTORY.

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### GENERAL SUGGESTIONS.

In most of the sections here outlined teachers are specially referred to one or more of the following books: Scott, "Organic Education," D. C. Heath & Co.; Kemp, "History for Graded and District Schools," Ginn & Co.; Kemp, "Outline of History for the Grades," Ginn & Co. All these books are decidedly helpful, giving outlines and suggestions in complete and well organized form. However, no teacher need hesitate to undertake any grade of work here suggested if she does not have any of the above books. The other books suggested in the various grades are carefully chosen, and will insure good results in the hands of any intelligent teacher.

All stories should be told to the class by the teacher. Children should be required to reproduce the stories orally, and, in justice to all concerned, the teacher should not merely read to the class.

All stories given to the class should be frequently reviewed. Keep a list of story titles on the blackboard. Let the class feel always that the stories are as much their regular work as is any other part of the curriculum.

Children can be taught to speak their thought in an easy, orderly and consecutive manner. This story work is intended to accomplish such a result.

### FIRST YEAR.

This outline is written by years rather than by terms. The order of work chosen for the first year is: First, primitive life as represented in Longfellow's story of Hiawatha; second, primitive life as represented in (a) old Aryan shepherd life, (b) Colorado shepherd life.

For the first part of this work teachers are advised to use the outline given in Scott's "Organic Education" (D. C. Heath & Co.), if possible. However, with or without the above book, the teacher can use Holbrook's "Hiawatha Primer" and Longfellow's "Hiawatha."

Use only such stories as pertain to the childhood of Hiawatha. Place your emphasis on the home life of the child, and also what he learned from nature, the flowers, trees, water, birds, animals—in short, unite nature study as much as possible with these stories. If the teacher has no other books than Longfellow's "Hiawatha," it will be advisable to transcribe the stories into prose, using only occasionally short quotations from the poem.

In all teaching tell the stories to the children. Don't read. Each story should be brief and within the child's ability to reproduce.

For the second part of this work use outline in Scott's "Organic Education" or Kemp's "History for Graded and District Schools." The outlines in the above books are sufficient for one-half a school year. If teachers wish to continue the work on Colorado shepherd life, Austin's "The Flock" is an excellent book.

## SECOND YEAR.

The order of work is: First, Persian child life and Bible stories; second, old Greek home life and mythology.

For first part of work use Scott's "Organic Education." For the Bible stories any of the following books are good: Herbst, "Tales and Customs of the Ancient Hebrews," Flanagan, Chicago; Guerber, "Story of the Chosen People," American Book Company, Chicago; Baldwin, "Old Stories of the East," American Book Company, Chicago. If the teacher does not wish to use the work on the Persian life, it is entirely possible to use only the Bible stories.

In the second part of the work Scott's "Organic Education" may be used as a guide. Kuck, "Milo, the Greek Boy" (C. W. Bardeen, Syracuse, N. Y.) is an excellent book of stories written expressly for this kind of work.

It is possible to use only Greek mythology stories if the teacher so prefers. In such cases any of the following books are recommended: Burt, "Herakles," Scribner's; Perry, "The Boys' Odyssey," Macmillan; Church, "Pictures from Greek Life and Story."

Again the teacher is urged to tell stories rather than read them to the children. And, further, your purpose is not simply

to tell the stories, but to tell them so well that their reproduction by the children shall aid both children and teacher in language and reading work.

### THIRD YEAR.

The general plan for this year is as follows: First, Greek history stories; second, stories of Roman home life and mythology. The last part of the previous year was devoted to Greek child life and mythology. The children will now readily take simple stories from Greek history. For the first part of this year's work any of the following books are useful: Baldwin's "Old Greek Stories," American Book Company; Guerber, "Story of the Greeks," American Book Company; Yonge, "Young Folks' History of Greece," Lothrop, Lee and Shepard Company, Boston.

For the second part of the year's work Scott's "Organic Education" and Andrews' "Ten Boys" (Ginn and Co.) are both useful. The first of the above books gives a full outline of work. The following are, any of them, excellent for this period of history: "Story of a Roman Boy" (pamphlet), published by Scott, Foresman & Co., Chicago; Becker, "Gallus," Longmans; Church, "Roman Life in the Days of Cicero," Macmillan; Church, "Two Thousand Years Ago," Appleton.

If the teacher so desires she may confine this period to Roman mythology. If this is done the following book will furnish material: Brooks, "Story of the Aeneid," Penn Publishing Company, Philadelphia.

By this time children ought to be able to do some written story work; but the teacher is cautioned to tell all stories and require oral reproduction before asking for written work. These written stories ought also to be part of your spelling, language and reading work.

### FOURTH YEAR.

The plan for this year is suggested as follows: First, Roman history stories; second, Germanic life and mythology. The first part of this work ties closely to the last work of the previous year. If previous teaching has been good the children will be well prepared for the Roman history stories. There are many good books published on this period. Any good Roman history may be used, but if it is written for adults the teacher should simplify and rewrite the stories.

All the following books are written for children, and any one of them will furnish ample material for this part of the year's work: Guerber, "Story of the Romans," American Book

Company; Yonge, "Young Folks' History of Rome," Lothrop, Lee and Shepard Company, Boston; Beesley, "Stories from the History of Rome," Macmillan; Butterworth, "Little Arthur's History of Rome," Crowell & Co.

The second part of the year's work can be found fully outlined in Scott's "Organic Education."

However, if the teacher prefers, work can be done by using Germanic mythology only, in which case either of the following books will furnish sufficient material: Baldwin, "Story of Siegfried," Scribner's; Holbrook, "Northland Heroes," Houghton, Mifflin & Co. Stories of Viking life can be used in this grade. Hall's "Viking Tales," Rand, McNally & Co., is an interesting series of stories.

The outline for fifth grade in Kemp's "Outline of History for the Grades" or in Kemp's "History for Graded and District Schools" may be used for this year of work, at the option of the teacher.

#### FIFTH YEAR.

The general topic for the year is chivalry and knighthood. It easily divides into two parts, as follows: First, The training of a knight; second, stories of the Crusades.

In the first part one book is specially recommended, viz., Pyle, "Men of Iron" (Harpers). This is a story of the training of an English boy for knighthood. It contains plenty of material for this part of the work.

The Arthurian legends are also excellent material for this grade. They may be used instead of the above work, if the teacher wishes. In this case any one of the following books is recommended: Brooks, "Story of King Arthur," Penn Publishing Company, Philadelphia; Lannier, "The Boys' King Arthur," Scribners; Frost, "The Knights of the Round Table," Scribners; "Greene's Legend of King Arthur and His Court," Ginn & Co.

Material for part two of the work of this year may be obtained from any good history of the Crusades, but most teachers will save time by obtaining Crusade stories written specially for children. Either of the following books will furnish material ready for use in this grade: Douglas, "Heroes of the Crusades," Lothrop, Lee and Shepard Company, Boston; Church, "The Crusaders," Macmillan. Teachers will find excellent suggestions in Scott, Tennyson or either of Kemp's books, already mentioned several times.

#### SIXTH YEAR.

The subject for this year is English history and literature stories.

The children have already studied chivalry, knighthood and the Crusades, and all this has been taught from the viewpoint of English history. Hence the work for the year divides easily into two sections, viz., what preceded and what followed the Crusade period. The second period is, of course, the important one. Teachers are advised to use Wright's "Children's Stories from English Literature," volumes I and II, in connection with any of the histories named in the list of this period. A very useful emphasis can be placed on Shakespeare, Bunyan and Milton, and interesting stories from the works of these writers may be found in Wright's books, named above. Lamb's "Tales from Shakespeare" is also an excellent help. Following is a list of English histories written for children. Any one of these is suitable to this grade: Guerber, "Story of the English," American Book Company; Church, "Stories from English History," Macmillan; Blaisdell, "Stories from English History," Ginn & Co.; "Mowry's First Steps in History of England," Silver Burdette.

## UNITED STATES HISTORY.

### General Suggestions.

*Nature of History*—History is often superficially presented as a mere "record of events." Such teachers look upon the text as the subject, which is to be mastered through the various processes of verbal memory. The result is that history appears to the student as a thing without life; it is hard to learn, uninteresting and often positively distasteful. But history lies beyond events. It deals *with the life* of a people *in the process of growth*. Hence, events as recorded in books are to be viewed as manifestations of *ideas* which have a *living progressive* existence. Nor does history repeat itself, "except in minor details" and move in a circle, as it were, but it moves forward in one grand sweep toward institutional freedom.

*Institutional Growth*—The growth, change, or movement in the thoughts and feelings of a people manifests itself through institutions. Hence we speak of the *institutional life* of a people, of which there are five phases; namely, the political, the industrial, the social, the educational and the religious. To present history in such light is to organize the facts, to make it more intelligible, more interesting, and thereby easier to learn.

*Interpretation of History*—Interpretation in history may be defined as reading meaning or content into individual facts or

events. By this process we discover the growth in institutional life, which, be it remembered, is the central principle in history. For example, the non-importation act may be viewed as a result of the passage of the Stamp Act. So it was, but a larger meaning may be found in it; namely, a struggle of the colonists for the rights of Englishmen, or it may properly be viewed as a manifestation of their struggle toward union and independence. Students should be encouraged to express their individual judgment and draw their own conclusions, but they should be cautioned about using present day standards as a measure of what was right or wrong in past centuries. Present conditions and tendencies of our institutions should be connected with past events to vitalize the subject and to show the progress of humanity.

*The Categories of History*—The chief categories are time, place, cause and effect, purpose and means. *Dates* are important mainly as landmarks or as marking the change from one epoch to that of another. Only important dates, therefore, should be learned, but they should be thoroughly learned, with all of their significance. Many teachers neglect the *place* relation in history. The following illustration will show its valuable aid to the memory. Suppose you strive to remember a supposed familiar face. Instantly the mind seeks to recall the place where the face was seen, and when it succeeds in doing so a whole train of circumstances are vividly brought to mind and the name or identity of the person is established. Hence much attention should be given to map study. The maps of the text should be supplemented by wall maps and their use insisted upon until the student acquires the habit of referring to them as he would to a dictionary. Outline maps may be used most profitably and may be secured from various publishing houses at a nominal cost. The *cause and effect* relation in history is all-important. Without it history is a series of disconnected facts. Events must be viewed as manifesting a result of something and as being a cause of something. The *purpose and means* relation in history is largely concerned with the actions of individuals and is highly essential in stimulating the growth of character in the student.

*The Biographical Element* in history has been emphasized in the lower grades and should not be lost sight of in the seventh and eighth grades. Events, when related to great per-



sonages, have a living personal significance. In this phase of the work we pass from the study of causes to the study of purpose and motives. Jefferson's broad-mindedness in the Louisiana purchase may be contrasted with his narrow-mindedness in his plan of coast defense. When threatened by the Writs of Assistance, James Otis' high moral courage may be observed in his resigning a lucrative royal position to plead before the Bar of Justice, the legal and commercial rights of the colonists; the attitude of Samuel Adams toward his domestic duties may be contrasted with his attitude toward public duties; Arnold's services at Saratoga may be contrasted with his traitorous overtures with the British; Burr's conspiracy, with those of certain sugar trust magnates, etc., etc. In this way the ethical nature of the student can be strongly stimulated, and his judgment is developed by taking various points of view.

*The Chief Aim in History*—The chief aim in teaching history is to give to pupils who study it strong moral characters. They should be led to see how men and women have sacrificed their own interests to promote better institutions for humanity, and unconsciously these pupils should be brought to give what is best in them to their community, their state and their nation for the good of future generations.

*The Study of Types*—In the seventh and eighth grades in history, the teacher should aim whenever possible to present masses of details or conditions through type lessons. In exploration a few men should be studied in detail, so as to lead the pupil to project himself into the life of these men. Typical colonies should be studied for the same reason, likewise typical battles in each war, and treaties, etc. Three objects are gained by such method of presentation: (1) the subject is made more real and interesting; (2) the student learns a method of investigation; (3) much time is saved.

It is believed that all of the books suggested might well be purchased by any school—not all at once, perhaps, but a few may be added each year.

#### SEVENTH YEAR.

*\*Alternation*—In rural schools pupils of the seventh and eighth years may be put together for the study of United States History. They should begin the seventh year's work in Septem-

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\*This is merely a suggestion.

ber, 1910, and each alternate year thereafter. They should begin the eighth year's work in September, 1911, and each alternate year thereafter.

*I. Discovery and Exploration—*

References: "History for Graded and District Schools," Kemp; Cheyney's "European Background of American History;" Fisk's "Discovery of America;" Semple's "American History and Its Geographical Influence;" "James and Sanford's American History;" "Fiske's How the U. S. Became a Nation."

1. European Background, or how each of the following was an influence in the discovery of America.

(a) The Crusades; the Reformation.

(b) The invention of printing, of gunpowder, of the mariner's compass.

(c) Political Conditions; the rise of great nations and their aggressive monarchs; Turkish conquests.

(d) Commercial Conditions:

(1) Nature of the trade between Europe and the far East; trade routes.

(2) Fall of Constantinople. (1453.)

(3) Portuguese enterprise: Prince Henry and his school; De Gama.

2. Physical characteristics of North America: The three gateways to the interior; the Atlantic slope; its soil and climate; river systems.

3. Study the explorers in groups as to time, place, means, purpose and results. Select one or two explorers as types for each group and make such investigation as real as possible through incidents, details, the use of pictures, maps, etc. Give brief notice to the work of the other explorers of each group, after which summarize the work of each group and the resulting claims of their monarchs. For the Spanish group study Columbus and De Soto; for the English study, the Cabots; for the French study, La Salle and Marquette; and for the Dutch, take Henry Hudson. What international laws supported these territorial claims?

*II. Colonization—*

References: Thwaite's "Colonies" (teacher and pupils); Cheyney's "Background of American History" (teacher and pupils); Kemp's "History for Graded and District Schools" (pupils); Bourne's "Spain in America;" Thwaite's "France in America;" Pratt's "De Soto, Marquette and La Salle" (pupils).

1. European Background: Ferdinand and Isabella; Spain's Commercial Achievements; the "Spanish Main." The Reformation; Huguenots in France vs. Catholics. Political struggles

in England which stimulated growth of self-government and emigration to America. Social and industrial conditions in England; expansion of commerce; wool growing; manufacturing; division into classes, with growing recognition of laboring classes.

2. Study of Spanish Settlements in America: character of settlers; Spanish policy toward the colonists; causes of her failure in American colonization: Cuba.

3. Study of Virginia as a typical southern colony. Work out in detail Virginia's physical features; her soil, climate and river systems. Her early settlers and their purpose; the London Company and its political and commercial relations both to king and to colonists; their labor system; their struggle for self-government, local and colonial; etc.

4. Study the other southern colonies briefly, making comparisons with conditions in Virginia.

5. Study the institutional life of the southern group of colonies as found in the first half of the eighteenth century. as follows:

- (a) Social life.
- (b) Government, colonial, general.
- (c) Business.
- (d) Education.
- (e) Religion.

6. Study Massachusetts, the typical colony of New England, as Virginia, the typical southern colony, was studied. Study the other New England colonies in the same manner, making frequent comparisons with the two typical colonies.

7. Study the institutional life of the New England colonies.

8. French settlements in North America. Their purposes; where; time; geography of the country. Contrast England's policy toward her colonists with that of France and Spain, also, their purposes, and observe the resulting differences.

### III. *International development of American colonial institutions from 1660 to 1740.*

European background; the Restoration; the Revolution of 1688.

#### IV. *Intercolonial wars*—(Thwaite's "France in America.")

European background; European struggle for balance of power; England's struggle for colonial empire.

#### V. *Revolutionary period*—(Hart's "Formation of the Union.")

1. European background; struggle for the rights of Englishmen—the organizing idea from 1760 to 1776; Burke, Fox, Lord North and others interested in America.
2. Struggle for American independence—the organizing idea from 1776 to 1781.

VI. *The critical period from 1781 to 1787*—(Fisk's "Critical Period.")

1. Attitude of England after the war.
2. Articles of Confederation and the domination of state sovereignty.
3. Need of a stronger central government.
4. Achievements of Washington, Marshall, Hamilton, Jefferson, Morris, Madison, Franklin and others.

Note: Some attention can profitably be given to our unwritten constitution—our presidents must not leave American soil; they must not hold office a third term.

References: James and Sanford, the American Statesmen series.

### EIGHTH YEAR.

*Alternation*—The eighth year's work in history is to be studied during the school year of 1911 and 1912, and each alternate year thereafter.

*General Plan*—This year's work deals with our national history to the present time. In general, the plan of the text may be followed. To present the work by administrations is to emphasize them as artificial units and thus lose sight of growth and unity in the subject matter. Hence the teacher must persistently and patiently trace relations through cause and effect, purpose and means, measures and men. (The recitation, therefore, should be a place to correct points of view, to discover relations, to develop the power of interpretation, to arouse interest and enthusiasm, rather than a place merely to scratch the memory.)

For the teacher to plead a lack of time, except for memory drill, is for her to place mere repetition above the power to think, and to confess her failure to see the relation of means to end. The teacher should remember that the less important facts in the lesson might profitably be omitted in the recitation.

I. *The Constitution*—In this period the well organized, but lifeless, Constitution of 1787 became a living instrument suited to the needs of the people, through the process of interpretation by such men as Marshall, Story, Lincoln, and through the addition of amendments.

Certain parts of the Constitution should be memorized in connection with closely related events:

(a) Preamble and the "elastic clause" in connection with the Louisiana purchase, Cumberland road and Union Pacific railroad.

(b) Article I and section 9, clause 1, in connection with the prohibition of foreign slave trade.

Note: James and Sanford's "American History" has this suggestion carefully and fully elaborated.

II. The growth of the west and national expansion may receive a detailed and organized presentation in the nature of a review, say about the year 1850, as suggested below:

- (a) The United States as it was in 1789.
- (b) Louisiana purchase, 1803.
- (c) Purchase of Florida, 1819.
- (d) Northeast boundary line dispute, 1842.
- (e) Annexation of Texas, 1845. Relation to Louisiana purchase.
- (f) Oregon territory, 1846.
- (g) Mexican cession, 1848.

- 1. Relation to the slavery problem.
- 2. Relation to the Mexican war.

Note: Professor Caldwell says that this controversy marks the time of important changes in our political history. Close to this time Webster, Clay, Calhoun and others, who loved the Union, and tried, each in his own way, to preserve it, disappeared from the stage, and new actors— young men, such as Davis, Stephens and others— appeared on the scene and worked for disunion as the only sane solution of our political entanglements.

- (h) Gadsden purchase, 1853.
- (i) Purchase of Alaska, 1867.
- (j) Hawaiian annexation, 1895.
- (k) Acquisitions through the Spanish-American war, 1898.
- (l) The Samoan islands.
- (m) Panama canal zone.

References: "Expansion of American People," Sparks; "Episodes," Roosevelt; "A Century of Expansion," Johnson.

III. Internal improvements. Relation to our industrial, political and educational life.

IV. Other questions, such as the following, may be profitably considered as time and facilities permit:

- (a) The slavery question.
- (b) The spoils system and civil service reform.
- (c) The tariff question.
- (d) State sovereignty vs. national sovereignty.

References: "Division and Reunion," Wilson; "Birdseye View of the Civil War," Dodge; "The Middle Period," Burgess; historical novels, poetry and other forms of literature should be correlated.

## PHYSICAL EDUCATION.

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### FIRST AND SECOND GRADES.

No formal gymnastics are necessary in these grades, but children should not be compelled to sit quietly very long at a time. They should be relieved from study at frequent intervals and allowed to move about the room. The wise teacher will notice when her small pupils are becoming restless and will meet the situation by giving some simple marching, followed by breathing exercises. It is best to have no definite time for these exercises, but to introduce them whenever the pupils need them. Teachers should insist that the children spend the recess and noon periods out of doors, if the weather permits. They should also set the example for the children by going out and playing with them. In the second grade some simple rhythmical exercises may be added to the above.

### THIRD AND FOURTH GRADES.

Daily exercises for ten or fifteen minutes. Continue rhythm in the third grade. A few simple free hand movements, followed by breathing exercises, some easy folk dances, or marches, are advisable also. The fourth grade should have more formal free hand gymnastics, and more difficult folk dances. Require the children to spend as much time as possible in the open air. It is imperative that all teachers with whom the children come in contact should not only have good postures themselves, but should insist that at all times the pupils sit, stand, walk and breathe properly. This requirement should be strictly maintained throughout all the grades. The teacher who is negligent in this respect is shirking her duty and is criminally careless of the physical welfare of the pupils entrusted to her.

### FIFTH AND SIXTH GRADES.

In the fifth and all succeeding grades boys and girls should be given physical training in separate classes. Boys are more active than girls at this period of life and should be given more strenuous exercises. For boys vigorous free hand movements and work with bells, clubs and wands and work on ap-

paratus is recommended. Lively games should be an important feature of the work. For girls free hand gymnastics, folk dances, simple marches, with an occasional game, are desirable. A few short talks on breathing, sitting, standing and walking may be profitably introduced for both boys and girls.

### SEVENTH AND EIGHTH GRADES.

#### Boys.

Active games should be the predominating form of exercise in these grades. If the teachers in the preceding grades have performed their duty faithfully, and have given the pupils a good posture, there is little need of formal gymnastics in the seventh and eighth grades. Correct habits of sitting, standing, walking and breathing should have been established by this time, but teachers should see to it that the habits are continued. To this end breathing and posture exercises may be given at times. Teams in soccer foot ball, playground ball, baseball and track athletics should be organized, and even foot ball and basket ball in a modified form and under wise supervision may be permitted. Talks on personal hygiene should be given from time to time.

#### Girls.

Formal gymnastics should be practiced daily for fifteen to twenty minutes. Free hand work, or light apparatus, is best. Special attention should be given to acquiring or preserving a graceful carriage. Folk dances, drills and marches are a good means of varying the routine work. Great care should be taken to prevent girls in these grades from taking any form of exercise at those times when they should have absolute rest from all physical exertion. Simple talks on personal and sex hygiene should be given frequently. Games that are not too violent may be allowed for short periods.

Drive home hygienic truths with the following, and similar, "Healthgrams" and "A Health Alphabet":

"Hygiene is humanity's hope."

"Dirty air is death."

"Too much fresh air is just enough."

"Ventilate all the time—winter and summer—day and night."

"Night air is not injurious. Keep the windows of your sleeping room open."

"To cure the blues try deep breathing, fresh air, sunshine and music."

"Cleanliness costs little; sickness costs much."

"'Tis well to look to the well if you would keep well."

"The flies that light on your table may have come direct from a case of smallpox, diphtheria or scarlet fever. Do not take any chances—kill them."

"The three (dis)graces—filth, flies and fever."

"The typhoid chain of F's:

Filth—  $\left. \begin{array}{l} \text{flies} \\ \text{fingers} \end{array} \right\} \text{—food—fever.}''$

"The birth of a fly may mean the death of a baby; kill the flies and save the babies."

"Chew your food; your stomach has no teeth."

"You can eat too much, and probably will."

"When tired it is well to rest fifteen minutes before eating. This may save many times fifteen hours of suffering."

"Strong drink makes weak men."

### A HEALTH ALPHABET.

BY DR. S. ADOLPHUS KNOPF, NEW YORK.

- A** is for Anybody who can help prevent consumption—a child as well as a grown person.
- B** is for Breathing, which you should learn to do deeply. Take deep breaths in fresh air often.
- C** is for Coughing, which you should never do in any one's face. Turn away your head and hold your hand before your mouth.
- D** is for Don't. Don't swap apple cores, candy, chewing gum, half eaten food, whistles, bean blowers, or anything you put in your mouth.
- E** is for Eating no fruit that has not been washed or peeled, or anything that is not clean.
- F** is for Fingers, which should not be put in the mouth nor wet to turn the pages of books.
- G** is for Giving good example to your fellow pupils and play-mates by being always neat and clean—just as much so at home as at school.
- H** is for Handkerchief, which should be used only to wipe your nose, and not your slate, desk or shoes.



- I** is for Illness of other kinds besides consumption, which following these rules will help prevent, such as colds, measles, grippe, diphtheria and pneumonia.
- J** is for Joints, where children have tuberculosis more often than in their lungs.
- K** is for Keeping your finger nails clean. A scratch from a finger nail may make a bad sore.
- L** is for Learning to love fresh air, and not for learning to smoke.
- M** is for Mouth, which is meant to put food and drink into, and not for pins, money or anything not good to eat in it.
- N** is for Nose, which you should never pick or wipe on your hands or sleeves.
- O** is for Outdoors, where you should stay just as much as you can. Always play outdoors unless the weather is too stormy.
- P** is for Pencils, which you should not wet in your mouth to make them write blacker.
- Q** is for Questions, which you should ask the teacher if you don't understand all these rules.
- R** is for Roughness in play, by which you may hurt yourself or your comrades. If you have cut yourself, have been hurt by others or feel sick, don't fear to tell the teacher.
- S** is for Spitting, which should never be done except in a spittoon or piece of cloth or handkerchief used for that purpose alone. Never spit on a slate, on the floor, playground nor the sidewalk.
- T** is for Teeth, which you should clean with toothbrush and water after each meal or when you get up in the morning and before you go to bed at night.
- U** is for Unkind, which you should never be to a consumptive.
- V** is for Vessels, like drinking cups and glasses, which should not be used by one child after another without being washed in clean water each time.
- W** is for Washing your hands with soap and water before each meal, even if it is only lunch.
- X** is for X-rays, which sometimes help to discover consumption or other forms of tuberculosis.
- Y** is for You, who should never kiss anybody on the mouth nor allow them to do so to you.
- Z** is for Zeal in carrying out these rules.

## PHYSIOLOGY AND HYGIENE.

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Among school officials throughout the country there is a strong feeling that our courses in this subject have not been productive of the best results. There is a feeling that we have spent too much time with the names of bones, nerves, muscles, etc., etc., and not enough time with the things which have to do with the health of human beings. With this view of the matter the department of public instruction is in hearty accord. In adopting the book (Civics and Health) as one of the reading circle books the committee hopes that it may serve to enliven the study of hygiene in the classroom in all grades.

### FIRST AND SECOND GRADES.

- (a) See that hands and faces are clean.
- (b) Talk to children about the need of cleanliness of the person, the home, the school and the community.
- (c) Talk to children about eating, sleeping, fresh air and sunshine.
- (d) Talk about disease germs and how they get into the body. Mention the danger of putting pencils, or anything else which has been used by another, into the mouth.

### THIRD AND FOURTH GRADES.

- (a) See that hands and faces are kept clean.
- (b) Continue to give lessons as suggested in first and second grades.
- (c) Study the air; how it becomes impure; how we may secure pure air in our living and sleeping rooms; the effects on our lives.
- (d) The reasons for keeping the body, the home, the school and the surroundings clean and beautiful.
- (e) In the same connection study disease germs and how they attack us. How we resist; first, by keeping them away from us; second, by being strong enough to resist when they do get into our bodies. Study the effect of these germs upon one who is an habitual user of tobacco or alcohol—the advantages of a strong body—the strong survive, the weak die.
- (f) Care of the eyes, nose, mouth, ears and teeth.
- (g) Care of the skin, the nails and the hair.
- (h) Bathing, exercising, sleeping, working and playing.
- (i) Good habits of living.

**FIFTH AND SIXTH GRADES.**

(a) Emphasize cleanliness of the person, home, school and community.

(b) Make simple experiments with air.

(c) Observe movements of air currents.

(d) Give simple problems in cubic air space required for each person in a well ventilated room.

(e) Study amount, kind and direction of light that is best for the eyes.

(f) Clothing best suited to the development and comfort of the human body.

(g) Tell the story of the life of Louis Pasteur.

(h) Dangers of disease germs—drinking cups, flies, unclean sidewalks, streets, floors of cars, public buildings and halls, out-houses, stables, back yards and alleys.

(i) Dangers in alcohol, drugs and tobacco—put particular stress on the ill effects of cigarettes on growing youths.

(j) Again refer to the necessity of forming good habits in bathing, exercising, etc.

(k) Simple lessons in the structure of the skin: care of the skin, hair and nails.

(l) Simple lessons in the structure of the teeth; care of the teeth.

(m) Simple lessons in the structure of the ear; care of the ear.

(n) Simple lessons in the structure of the eye; care of the eye.

(o) Simple lessons in the structure of the nose; care of the nose.

(p) Every teacher should familiarize himself with emergency methods of procedure in accidents,—burns, sprains, severing of an artery, nosebleed, cuts and bruises, choking, drowning. Have at hand simple remedies, such as camphor, arnica, witch-hazel, collodion or something having a similar effect, absorbent cotton, adhesive plaster. The teacher should not only be able to use these understandingly, but should instruct the pupils to do so. See Gulick's "Emergencies," Ginn & Co.

**SEVENTH AND EIGHTH GRADES.**

(a) Give much attention to a review of all work done in previous grades.

(b) Study the structure of the human body, as given in the texts for these grades. Emphasize the fact that the body is a working unit, the object of each part of which is to preserve life and health.

(c) Study the life of Robert Koch, and other persons who have fought disease. Study, in a comparative way, statistics on human diseases—relative to the discovery and use of anti-toxin, vaccine, etc.

(d) Study epidemics traceable to water supply, milk supply or like source of contamination.

(e) Consider the best means of securing good water: I—in the city; II—in the village; III—in the country. Emphasize the value of living outdoors as much as possible.

#### REFERENCES.

The Gulick Hygiene Series—Luther Halsey Gulick, M. D.

Series of Physiologies—A. F. Blaisdell, M. D.

What You Should Know About Tuberculosis—New York City Board of Health.

How Insects Affect Health in Rural Districts—Farmers' Bulletin 155 (Secretary of Agriculture, Washington, D. C.)

Principles of Nutrition and Nutritive Value of Food—Farmers' Bulletin 142 (Secretary of Agriculture, Washington, D. C.)

#### EYES.

Eyes are necessary for self-protection and to make a living yet they are the least cared for and the most abused part of the body.

Eye-strain is an excessive or abnormal effort of an eye or a pair of eyes to maintain perfect vision (sight).

Eye-strain is due chiefly to some defect in the shape of the eyeball or to weakness of the muscles of the eyes. It may also be due to or made worse by over-use or unwise use of the eyes.

A perfect eye can be strained by over or unwise use just as a perfect arm or leg can be. There are few perfect eyes.

The imperfect eyes are on a strain whenever open. They are more easily harmed by over or unwise use. This means a leakage of nerve force in the eyes and in other parts of the body. Such eyes may seem to be perfect and yet by using up more nerve force than their share, in order to see, may lead to diseases in other parts of the body thus deprived of nerve force.

Slight imperfections of the eyeballs causing small amounts of eye-strain often do more harm by continuously undermining the general health than do the greater ones that are more readily felt and hence more quickly relieved.

Reading while lying down, and by poor light, night or day, is harmful to the eyes.

### Some Bad Effects of Eye-Strain.

Headache and neuralgia, particularly over the brows and in the back of the head and neck.

Inflammations: redness, scales, crusts and styes of the eyelids and ulcers of the eyeball.

Cross-eyes: the eye that crosses usually loses vision from non-use and may become practically useless if not corrected.

"Reflex" nervous conditions: epileptic spasms, convulsions, "nervousness," restlessness at night, palpitation of the heart, St. Vitus' dance, nausea, vomiting, indigestion, a "run down" and even more serious physical conditions are common.

Watering of the eyes and blurring, when reading, sewing or doing other near and fine work.

Backwardness in mental growth, and truancy. Eye-strain produces an irritation in the brain expressed by a restless desire to run away from school (and near work) and then to stay away for fear of failure in class.

Tilting of the head. When constant this is often due to an effort to straighten out crooked vision and may lead to spinal curvature with its bad effects.

Holding the work close to the eyes shows eye-strain.

When these conditions are caused by defects in the eyeballs, glasses are necessary and they cannot be permanently cured without glasses.

Children's eyes should always be tested with pupils dilated by atropine (belladonna).

Spectacles are better than nose glasses.

It is as necessary to keep the glasses on straight as it is to have a proper fit. If glasses are not comfortable or do not fit they will be taken off and not worn. Because a child refuses to wear the glasses it is no sign that he does not need properly-fitting spectacles.

### EARS, NOSE AND THROAT.

The sense of hearing is very valuable to everyone. Although each person has two ears well protected in dense bone, they are readily reached by diseases that attack the lining membrane of the nose and throat, such as colds, la grippe, measles, scarlet fever and diphtheria.

The ears are connected with the throat by two gristle-like tubes. It is through these tubes that air is forced into the middle ear cavities during the act of swallowing. For good hearing there must be air in the middle ears to balance the air pressure from without.

There is a pair of glands, called tonsils, one on either side of the root of the tongue, and also naturally (normally) a small tonsil-like mass called adenoids, in the upper part of the throat, close to the tubes leading to the ears.

When either the tonsils or the adenoids become too large, they interfere with the air entering the tubes to the ears and with the circulation of the blood to and from the ears. As a result the hearing becomes dull, especially when the child has a "cold." Repeated "colds" bring about lasting dullness of the sense of hearing.

Children with earaches almost always have adenoid growths. Earaches should have prompt and proper care, for they may result in deafness or in serious disease of the bone in which the middle ear is located.

"Running" ears are diseased ears. If neglected they result in damaged hearing and are a source of danger to life. All such ears should be kept clean and have proper treatment.

Nasal breathing is not only necessary for the preservation of hearing, but for the general health. It is known that even in dogs when nose breathing becomes impossible the hair falls out, the skin grows wrinkled and asthma sets in. And the same thing happens to the puppies born when the mother dog is so affected.

Bony deformities and other growths inside of the nose may also prevent nose breathing, and, like tonsils and adenoids, by causing mouth breathing, give rise to deformities of the upper jaw, irregular teeth and to a number of nervous troubles and diseases, such as St. Vitus' dance, night terrors, headaches, restlessness, night sweats, mental dullness, backwardness in school, asthma, rheumatism and tuberculous glands of the neck.

Mouth breathers are more liable to contagious diseases and to diseases of the bronchial tubes and lungs, which are more apt to be fatal than in nose breathers.

Practically all of the causes of mouth breathing are curable, and the earlier they are removed the easier it is for the child to overcome the "mouth breathing habit."

Prepared for the Humane Education Society, Denver.

## TEETH.

Teeth that are well cared for are beautiful as well as useful. Their chief use is to prepare the food for the stomach—to grind

the food and mix it with the saliva. Food that is not thoroughly chewed causes indigestion and constipation.

Teeth should last to the end of life. If they do not it is due to decay or loosening.

Decay is caused by acids, formed from bits of food left after eating, along the edge of the gums, between the teeth, and in the crevices of the grinding surfaces.

Loosening of the teeth is caused by diseased gums. Tartar is the chief cause of diseased gums. Swollen and bleeding gums are diseased gums. The way to prevent decay and loosening of the teeth is to keep them clean. The general health will be better if the teeth are kept in good condition, so that the food can be thoroughly chewed.

If children are taught to chew their food thoroughly their teeth will grow strong and healthy. Teeth can best be kept clean by scrubbing with a fairly stiff brush, with bristles well apart. to reach between the teeth, and some good powder or paste. Scrub all sides of the teeth, and in all directions, for at least two minutes, night and morning.

Irregularities of the teeth should receive careful treatment, especially those which make it impossible to close the teeth properly, thus leading to poor digestion and mouth breathing.

The first permanent molars are the most important teeth in the mouth. They come at about the sixth year, and are located right back of the temporary or "baby" teeth, and are often neglected because they are mistaken for temporary teeth.

The temporary teeth should last until the permanent ones come in. Any that decay before that time should be filled. This is necessary to the good health of the child. As good care should be taken of the temporary teeth as of the permanent ones. Too early extraction of the temporary teeth is a cause of deformities of the mouth.

A dentist should carefully examine the teeth at least twice a year. A bad condition of the throat, the nose and the ears is made worse by decayed teeth. They add to the chances of catching infectious diseases. Well cared for teeth and a clean mouth help prevent tuberculosis.

Cleanliness is the best guard against disease.

Prepared by the Denver Dental Association.

## MUSIC.

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AIM—The aim of the music course is to make the children musical, rather than to make them musicians.

Above and beyond all teaching of musical theory or technicalities, it is better to train the children to love and appreciate music. This can be done by any earnest teacher who will enter, with a degree of enthusiasm, into the spirit of song-teaching and song-making.

First select a song worth while, then by *any* or *without any* method, teach it.

There are many important things musical that the humblest can teach equally as well as the specialist; enunciation and accent of the words, correct phrasing of the poetry—distortion of English is the rule and not the exception in most song performances, whether of amateur or professional singer—the proper quality of the vowels, the vigor and expressiveness of the Anglo-Saxon consonants, tone-color and musical feeling.

At times poetry, suitable for songs, should be given the class. This poetry should be discussed by teacher and pupils. They should decide what character of music would best fit the sentiment of the words. The children should be encouraged to compose melodies for the words. They need not be required to write out their melodies, but if once a real need be felt for learning the mechanics of music all obstacles will be overcome and the child will be interested and will work as faithfully in the notation of music as he now works in any other subject.

Music might well be termed a method of teaching reading, for when properly done, its effects upon pronunciation, enunciation and phrasing in oral reading are at once noticeable.

If the teacher can find time to prepare a brief history of the song he is about to teach, then discuss the meaning of the music with his children, he may be certain of a sympathetic response from his pupils. Interest does more than any amount of force or persuasion. The following list of songs is suggested. Many of these are interwoven with our lives:

Home, Sweet Home; Annie Laurie; Jesus, Lover of My Soul; Suanee River; Old Kentucky Home; Flow Gently, Sweet Afton;



Sweet and Low; Silent Night; Stars of the Summer Night; There's Music in the Air; The Harp That Once Thru Tara's Halls; Die Wacht am Rhein; America; Dixie.

American Hymn, arranged by W. W. Gilchrist, Oliver Ditson Company, is a very easy, yet a most rousing patriotic song. It might well be termed our national flag song. W. Otto Meissner, supervisor of music, Connersville, Indiana, has written a cycle of songs for children. These are simple melodies and easily taught.

A rural school should have a music reader planned and graded for two groups. The publishing houses will gladly answer inquiries about such books. A closer gradation than this is scarcely practical. Book two should contain two and three part music. The whole school should take part in all song work, the younger pupils singing the soprano, the older pupils singing the harmonies.

GRADING—Divide the school into two groups.

Group I—Grades one to four, inclusive.

Group II—Grades five to eight, inclusive.

METHOD—Group I—Reading by note.

Teach a simple rote song. When this song is thoroughly learned, teach the singing names of the notes in it. Use this song as a drill table in note reading. This drill may be supplemented by using any familiar song.

Follow this by teaching the intervals of the major scale:

Dōh Mē Sōh Dōh

complete the scale by teaching:

Rā Fah Lāh Tē

While teaching the notes of the scale, refer again and again to the corresponding notes in the drill rote song, and in other songs used for the drill work.

TRAIN THE EAR to recognize the note name of a given pitch. This can be done by having a pupil sing different intervals of the scale, using vowel sounds, as  $\bar{o}\bar{o}$ ,  $\bar{o}$ ,  $\bar{a}\bar{w}$ , the class giving the note name of the pitch sung.

DEVELOP MUSICAL FEELING while teaching scale exercises, by asking the children to sing as though it were morning, evening, cloudy, sunny, sing as though they were sad, glad, etc.

The correlative side of this training should not be neglected. Have a part of the class, or better still, one child, sing, not using words, and the others tell whether the singer meant morning, evening, sadness, gladness, etc.

This training is the basis of musical appreciation and interpretation.

Teach the letter names of the soprano clef, including the three added lines below and the first above. Emphasize the fact that the letter names are constant, but that the singing names vary with the key.

**SIGNATURES**—Teach recognition of sharps and flats, that the right hand sharp is always *tê*, that the right hand flat is always *fah*. From these two rules drill the child to locate *Doh* or *One* of the major scale.

**TIME AND TIME SIGNATURES**—Begin this phase of the subject by rhythmical counting, vary by quiet rhythmical tapping.

Ex:  $\overset{\curvearrowright}{1}, 2 / \overset{\curvearrowright}{1}, 2 / \quad \overset{\curvearrowright}{1}, 2, 3 / \overset{\curvearrowright}{1}, 2, 3 /$

In teaching rhythms, make constant reference to the drill and other familiar songs.

Train the ear to recognize the rhythm. This can be done by a pupil singing or tapping a certain rhythm, other pupils giving the number of units in each recurring wave.

Teach time names of notes, whole, half, quarter, dotted half, etc. Then teach time, signatures and their meanings, 2/4, 3/4, etc.

**GROUP II**—Review the work for Group I.

Teach the letter names of the bass clef and its pitch relation to the soprano clef. Call attention to the fact that the first added line above the bass-clef is the first line below the soprano clef—middle C.

Teach that the rule for finding the major key, "right hand sharp is *tê*, right hand flat is *fah*," is true for the bass clef.

**MINOR MODE**—Teach a simple rote song in a minor key. When learned have the pupils sing this song using the note names instead of the words. Follow this song by teaching the following intervals of the minor scale:

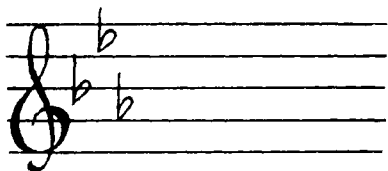
Läh      Dōh      Mē      Läh

complete the scale by teaching:

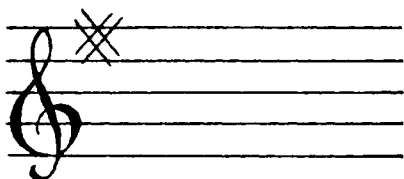
Tē      Rā      Fah      Sē

While teaching the intervals in this scale refer again and again to the drill rote song. Use the same devices for ear training as suggested in Group I.

**KEY SIGNATURE**—Teach that "For every signature there are two keys, a major which begins on *Dōh*, and minor which begins on *Läh*."



Signature of E flat, major  
or C minor.



G major or E minor.

Whether a song is in the major or minor key is determined only by the character of its music.

Drill on key signatures.

ACCIDENTALS—Teach the effect of a sharp or a flat placed immediately to the left of a note.

Illustrate the use of accidentals by referring to accidentals in the songs familiar to the pupils.

References—"McLaughlin & Gilchrist Song Reader," Ginn & Co.; "The Common Song Book," Silver Burdette & Co.

## HANDICRAFT.

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### GENERAL SUGGESTIONS.

It has been demonstrated beyond question that industrial art has a place in our schools. The child is pre-eminently a doer; he is active minded. Work with the hands does not retard mental development; it stimulates mental processes, especially in the case of so-called backward children.

All handwork should be carefully planned; every model worked out in detail before being presented to a class, and, should there be given clearly, definitely, logically; otherwise much valuable time will be wasted. Properly introduced, weaving and basketry will go far toward settling the vexed question of providing pleasant, profitable, wholesome seat work. Older children will gladly render great service in "starting" the younger ones.

Handwork in the lower grades should be such as will bring into play the large muscles. Any danger of eye-strain must be avoided. Posture should be closely watched. In so far as possible use coarse materials. Do not permit slovenly work, yet do not require a too finished product. The child should experience pleasure in the doing.

Models should be simple enough for home duplication. Tapestry needles will serve nicely for all models here given. Use home materials whenever possible, and teach children to utilize the commonplace. Native grasses, rushes and reeds can often be used, and they are especially desirable.

### WEAVING.

Rug or rag carpet for bathroom floor—For a loom use strong pasteboard 5 inches by 7 inches. Slash or notch the ends one-half inch apart, beginning one-half inch from the edge. String with white carpet warp or wrapping cord. For woof use old sheeting, torn into strips one-quarter inch wide. Weave alternately from each end toward the center, being careful not to draw in the sides. Put in contrasting stripes—sheeting can be easily dyed.

Doll towels may be made of darning cotton. Slash the ends of loom one-quarter inch apart.

Doll hammocks are made of remnants of yarns or zephyrs.

Doll's Tam O'Shanter—Slash the edge of a 5-inch pasteboard circle one-half inch apart; make sure of an uneven number when

finished. Place a pin in the center as a guide and string from side to side, draw carefully to the center before weaving. Weave from the center toward the edge. When half way down put in a stripe of contrasting color. Slip from the loom and draw in the edge by overcasting. Finish with a pom-pon of contrasting color. White works up nicely with pink or light blue.

**Stocking Cap**—Make the loom five inches long, three and one-half inches wide at bottom and one and three-quarters inches wide at the top. Slash one-half inch apart at the bottom, beginning one-quarter inch from the edge; slash one-quarter inch apart at the top, beginning one-quarter inch from the edge. String first on one side and then on the other; putting in one additional string to make an odd number. Weave around the loom from the top down. Put in contrasting stripe and finish with cord and tassel. A doll's petticoat can also be made on this model.

In upper grades pleasing effects may be achieved by stringing and weaving with alternate colors, thereby forming plaids.

### BASKETRY.

Raffia when bought in five pound lots may be had at 19 cents per pound in the natural color; other colors are considerably more expensive, but need not be used in large quantities. Many teachers do their own dyeing at slight expense. Any book on basketry will give many attractive models. A few suggestions are given herein.

It is, perhaps, wise to use wrapping in first grade, braiding and sewing in second, and the lazy squaw stitch in third. Beginning with fourth grade many beautiful things may be worked out in plain and fancy stitch with raffia and reeds.

### FIRST GRADE—WRAPPING.

Wrapping may be used in many models. Contrasting colors are attractive to children, but care should be exercised in the choice of colors.

Mats, picture frames, napkin rings, work boxes, purses and whisk broom holders may be made by wrapping raffia over paste-board. The last two named are made of two circles of different sizes, whipped together.

### SECOND GRADE—BRAIDING AND SEWING.

From braided raffia (using nine or twelve strands in the braid) may be sewed purses (which may be beaded), baskets, and, best of all, dolls' hats. If these last be made at Easter time, fitted

to real dolls, and trimmed with bits of materials brought from home, carefully harmonized and suited to the style of hat being trimmed, really charming effects may be produced and valuable lessons stored away in the mind for future reference.

### THIRD GRADE—LAZY SQUAW STITCH.

Basket—Use enough strands to make a good size filler, wrap closely and start the center of the basket. Wrap three or four times and sew over preceding coil once and repeat, shaping basket as desired. An industrious squaw wraps once and sews once, and her basket holds water, but not so with the lazy squaw. When the stitch has been mastered, simple designs in harmonizing colors may be wrought in.

Beginning with the fourth grade, large size reeds may be used in place of the raffia filler, and good designs copied from other baskets, from illustrations, from Indian pottery, or original designs may be employed.

#### *Suggestive materials for handicraft or construction work—*

- Acorns—String for chains, baskets, portieres, etc.
- Barrel hoops—Indian bows.
- Berries—Stringing and counting.
- Burlap—Iron holders, screens for mounting.
- Carpet—Ingrain, raveled for weaving.
- Cat tails—Reed weaving and frames.
- Clothes pins—Dolls, log houses, fences.
- Cones and seeds of all kinds—String for decoration.
- Colored paper and wall paper—Lanterns, caps, pin wheels, kites, boats.
- Corn cobs—Dolls and furniture.
- Corn stalks—Furniture (put together with pins).
- Corn, popped—Stringing.
- Corrugated paper—Wash boards, log houses, roofs.
- Feathers—Indian headgear, dusters, trimming for dolls' hats.
- Ferns and leaves—Pressed for decoration.
- Fruits—Lemons for pigs, raisins with cloves for turtles, raisins with leaf wings for moths and butterflies.
- Gourds—Dippers and vases.
- Meat skewers—Handles for tools.
- Milk bottle tops—Wheels.
- Milk weed pods—Boats, chariots, carts.
- Milk weed seed wings—Padding for doll comforts, pom-poms.
- Raffia—Sewing, weaving and knotting.
- Rose berries—Stringing.
- Rushes—Weaving chair seats.
- Yarn—Weaving.

In connection with handicraft work, Indian stories should be told in illustrating the basketry, Colonial tales illustrating the weaving, the story of Tam O'Shanter when making the Tam O'Shanters, stories of Canadian winter sports—skiing, tobogganing, etc.—when making the stocking caps. Zitkala-Sa—Old Indiana Legends, Judd's Wigwam Stories, Ginn & Co.

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## DRAWING.

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### GENERAL SUGGESTIONS.

This course is based on elementary manual training and the observation of color and form in nature. The materials used are inexpensive and easily obtained and the models should be artistically designed as to form and color. Careful selection of colors in the smallest details is of the utmost importance. The children's choice of materials should be limited sufficiently to insure pleasing harmony in the results.

The fundamental principles underlying good taste should be taught as carefully in making the simplest model as in any other art work. First, a well proportioned, practical constructive design is necessary; second, careful selection of material. This does not mean expensive material, but that suited to the use to which the article is to be subjected; and material that has as much beauty in itself as can be secured—if careful thought be given to these matters, the simple exercises given to the smallest children may be true training in art, and may accomplish more in the formation of good taste than many so-called art courses have done.

The constructive drawing should always be required—an exact development in pattern or a correct working drawing should precede the construction of all models in other material. The design for decoration should be carefully drawn in color, on paper, before attempting to place it on any finished model. This will give the most practical training in elementary drawing that can be devised.

All work must be neat in execution, and should be simple in design. Avoid elaborate exercises that require a great expenditure of time. Use lines and geometric figures in the decoration, and be content with doing a few things well.

In connection with the drawing work, at least one or two good pictures should be studied and discussed each year. The Perry pictures for individual use of children may be obtained

at a nominal cost, and it is further suggested that, where practicable, a framed copy of one of the world's masterpieces should be procured for school room decoration each year. Suggested pictures:

Madonna of the Chair—Raphael.  
 Hiawatha—Norris.  
 Angels' Heads—Murillo.  
 The Drinking Trough—Dupre.  
 Caritas—Thayer.  
 Dignity and Impudence—Landseer.  
 A Helping Hand—Renouf.  
 Pilgrims Going to Church—Boughton.  
 Sistine Madonna—Raphael.  
 Kabyl—Schreyer.  
 Pied Piper of Hamelin—Kaulbach.  
 An Old Monarch—Bonheur.  
 The Angelus—Millet.  
 The Holy Family—Murillo.  
 Song of the Lark—Breton.  
 Oath of Knighthood—Abbey.  
 Christ and Doctors—Hofman.  
 Sir Galahad—Watts.  
 Aurora—Reni.  
 Frieze of the Prophets—Sargent  
 Shaw Memorial—Saint Gaudens.  
 The King of Rome—Greuze.  
 The Mill—Rembrandt.  
 Pot of Basil—Alexander.  
 David—Michael Angelo.  
 The Windmills—Van Ruysdael.  
 Crossing the Delaware—Trumbull.  
 George Washington—Stuart.  
 Martha Washington—Stuart.  
 Lincoln—Saint Gaudens.

This course has been divided into three outlines. In small rural schools outlines B and C will be suitable; in larger schools, where closer grading of pupils is possible, A, B and C should be used.

Outline C is intended to include the pupils of first, second and third grades; B is intended for the pupils of the higher grades. In the larger schools B should include grades four, five and six; A, grades seven and eight.

Probably one lesson each week can be given each group. Frequently exercises started at the lesson period can be carried forward at other times during the week without requiring much at-



tention from the teacher. The modeling, cutting and painting can often be used as profitable occupation for the little people during the recitation periods of the older pupils.

The outlines are arranged by months, giving lessons appropriate to the season.

A more elaborate treatment, either as to decorative design or execution in more difficult materials, may be required of the older pupils. For example, a first grade child may cut his book mark from a pattern which is provided for him, while the third grade child should draw his pattern; the first grade child may paste a design from units cut from paper, while the third grade child should draw and paint his pattern. Co-operation between younger and older pupils in rural schools will be very helpful—the older children may draw patterns and cut stencils for the younger children to use in making and painting.

Whenever opportunity occurs, point out the beauties of nature. Observe the color in stones, shells, feathers, birds, plant and animal forms, in tints of the sky, mountain and plain. Encourage the children to bring to school, and arrange, sprays of leaves, grasses and flowers. An interest in window plants and school grounds should be awakened. Try to discover similar exercises to those suggested in the outline which will supply some need of the child in the home. Encourage the girls to learn to hem, to bind, to sew seams, work buttonholes and to cut patterns for their work. The boys should be made to feel an interest in using the pocket knife, hatchet, hammer and nails on models planned in the drawing class. Much excellent work is possible with materials to be secured in almost all the homes merely for the asking.

Be exceedingly careful to teach an economical use of materials—allow no scrap of cord, paper, cloth or wood to be thrown away, or carelessly wasted that could be made of any use. Often the small pieces of cover paper left from the work of the older pupils will supply materials for smaller models for the primary class.

Whatever plan be pursued, the one important thing is to complete the work begun. Remembering to modify plans to suit materials and conditions and not to attempt more than you can do well.

Do not be afraid to allow children occasionally to copy good sketches and designs. Copying has its place in all art education; it has been abused in the past, but used wisely in connection with independent work from models it is a means of helping pupils greatly.

The necessity for good illustrations of all kinds of work is pressing. Do not fail to show the pupils all the good examples of design, pictorial and constructive work that you can secure. They will learn more from seeing and studying the work of others than they will by hearing or reading about it.

Materials—outlines A and B:

1. A pad of white drawing paper, size 9 inches by 12 inches.
2. Cover paper, bristol board, art paper, etc., which may be obtained from any paper house or local newspaper office.
3. A medium grade pencil.
4. Heavy manilla or prepared stencil paper.
5. An eraser.
6. Pasteboard, which may be obtained from old boxes.
7. A one-foot rule—marked with inches, halves, quarters, eighths and sixteenths—without a brass edge.
8. Water colors—any standard three-color box—and one extra pan of black or charcoal gray.
9. Scissors, pocket knives, hammers, needles and thread, a piece of linen, unbleached muslin, cheesecloth, burlap or crash.
10. Flour paste for mounting, glue for other purposes.

In stenciling on paper use water colors; on cloth use Easy dyes or oil paints diluted with turpentine and a few drops of Japan dryer. The latter is preferable if the article so decorated is to be laundered.

Materials—outline C:

1. Clay for modeling, which may be obtained from any pottery where tiles or flower pots are made. It costs less when shipped dry.
2. Scissors.
3. Paste.
4. Water colors—three-color box.
5. Cheap manilla paper for cutting. (If designs are to be made use enamel paper, red, maroon or blue.)
6. Cover paper for mounting. (Use golf red and orange in small quantities, combining with the neutral colors that are harmonious.)
7. Medium pencil.

#### Outline C.

Select one of the two exercises suggested.

*September—*

1. Model fruit or vegetables. Plate I.
2. Paper cutting from like objects as used in modeling.



PLATE I.



PLATE II.

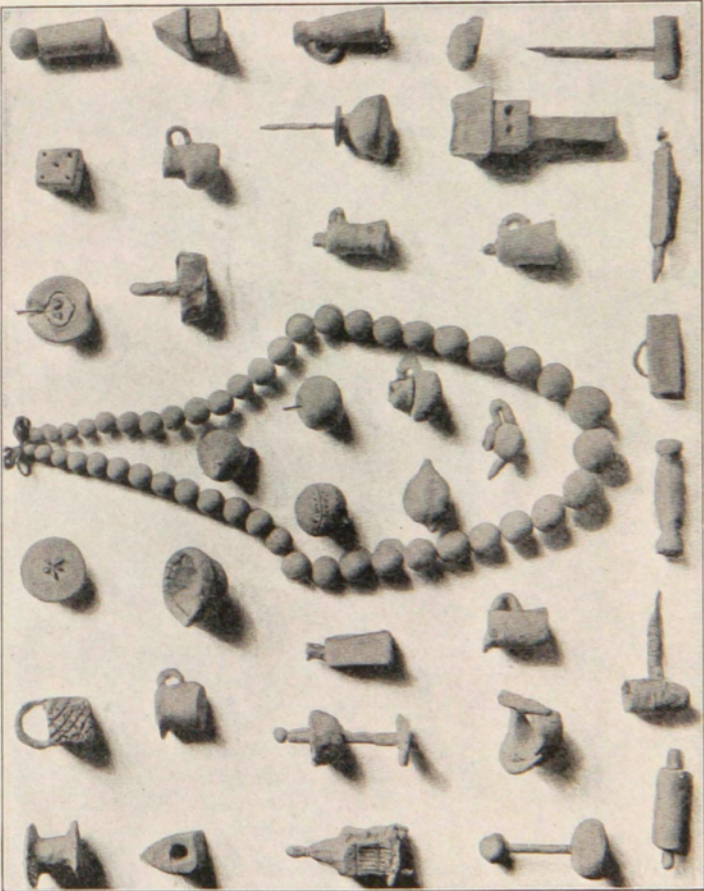


PLATE III.

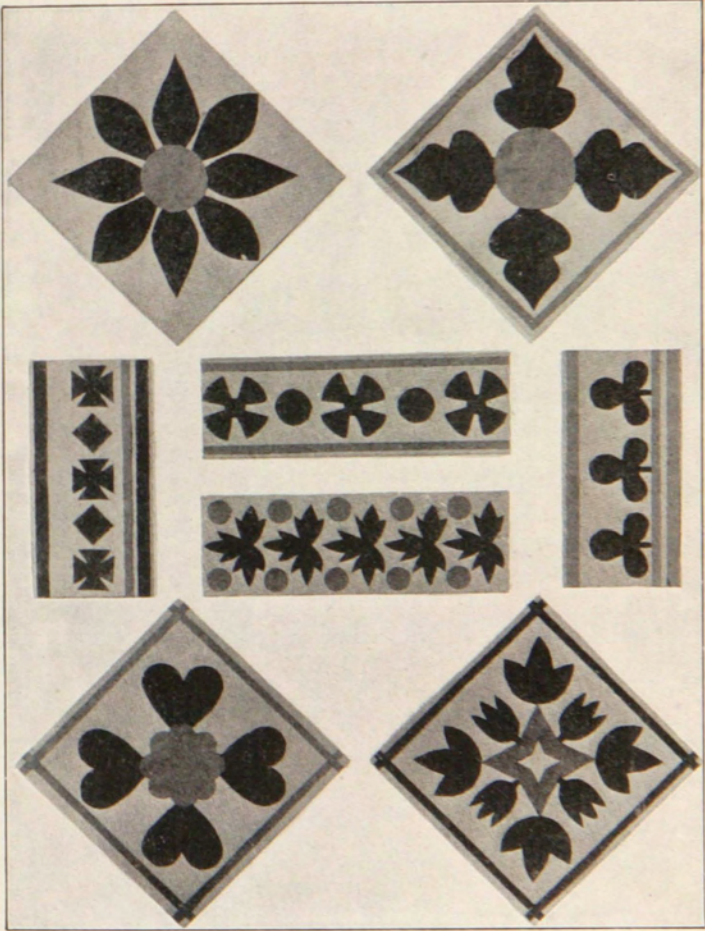


PLATE IV.

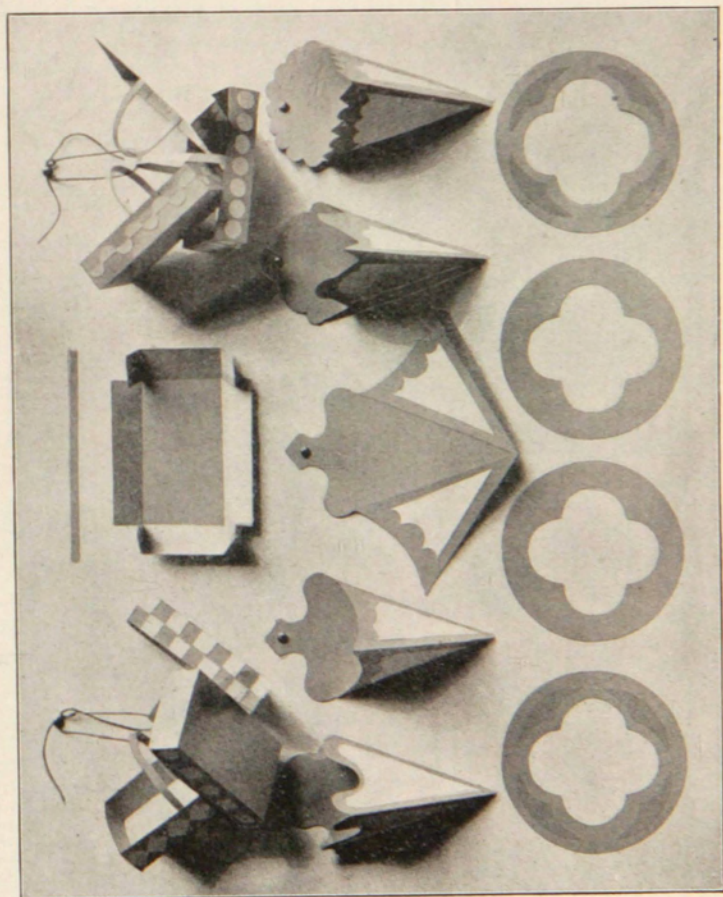


PLATE V.

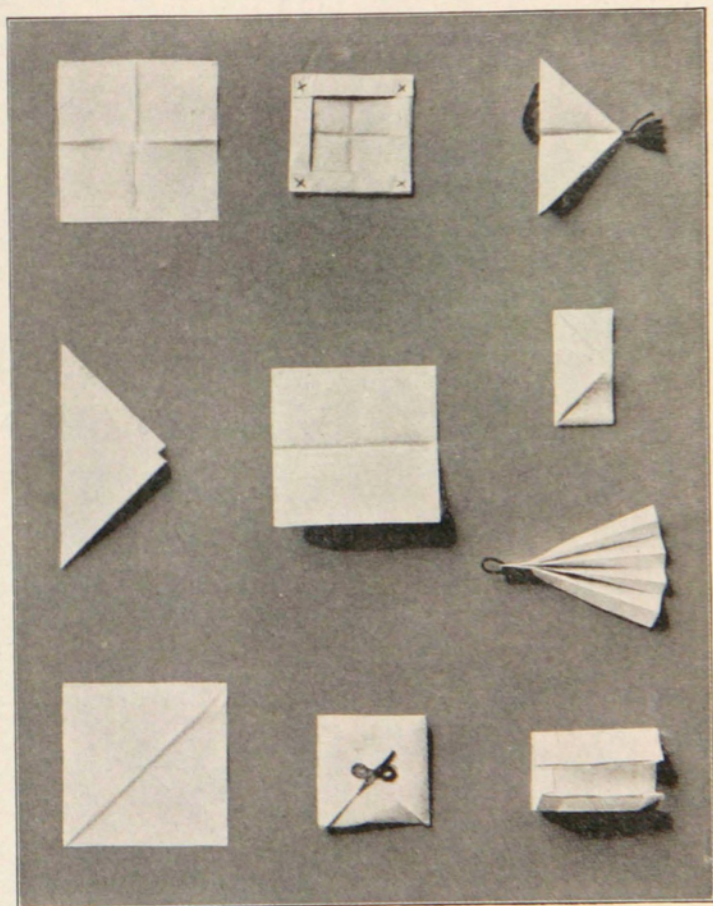


PLATE VI.



*October—*

1. Model leaves on tablets of clay. Make tablet carefully first, square, oblong or circular. Plate II.
2. Paper cutting from leaves—natural models, cottonwood, aspen, etc.

*November—*

1. Model bowls, vases, etc. Plate III.
2. Make designs of leaf forms cut from colored paper. Plate IV.

*December—*

1. Draw with brush, in silhouette, Christmas trees.
2. Cutting and making boxes, baskets and cornucopias for Christmas trees. Plate V.

*January—*

1. Cutting and making envelopes for valentines. Plate VI.
2. Make a booklet in which to place pictures of Washington and Lincoln.

*February—*

1. Make valentines. Cut hearts from red paper to be used as seals.
2. Mount Washington and Lincoln pictures in booklet. Learn to print names of each.

*March—*

1. Mount pictures, which should be collected by the children from magazines, etc., on neutral tinted paper.

*April—*

1. Model birds, nests and eggs.
2. Make May baskets.

*May and June—*

1. Fill May baskets with leaves and flowers for May day.
2. Make a booklet containing some school work to carry home. Use cover paper for the cover and tie neatly with cord. A design of flowers and leaves may be placed on the back.

**Outline B.***September—*

1. Paint a color scale consisting of red, yellow, orange, blue, yellow, green. (Match standard colored papers.)
2. Match colors from leaves, fruits and flowers.

*October—*

1. Print carefully a good alphabet. Plate VII.

**Modern Roman**

A B C D E F G H I

J K L M N O P Q

R S T U V W X Y Z

a b c d e f g h i j k l m

n o p q r s t u v w x y z

From Book of Alphabets, by H. W. Shaylor, Ginn & Co.

**PLATE VII.**

2. Print name and name of school using this alphabet.

*November—*

1. Make a portfolio of cover paper. Print the word "Portfolio" on the cover.

*December—*

1. Make candy boxes and decorate.
2. Print Christmas greetings on cards of stiff cover paper.

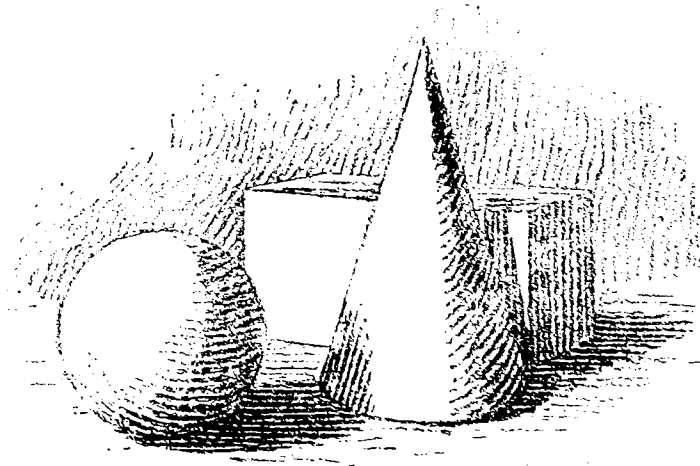
Plate VIII.



PLATE VIII.

*January—*

1. Draw cubes, cylinders, spheres, cones and common objects of similar form, in light and shade. Plate IX.



FROM THE PRANG DRAWING COURSE—SIXTH YEAR.

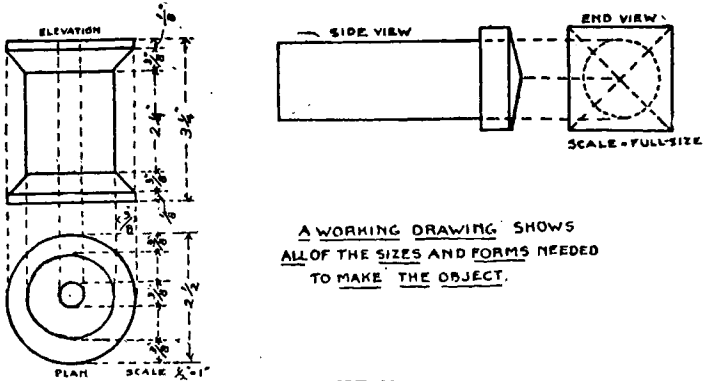
PLATE IX.

*February—*

1. Continue light and shade drawing begun in January.

*March—*

1. Make a working drawing. Plate X.



A WORKING DRAWING SHOWS  
ALL OF THE SIZES AND FORMS NEEDED  
TO MAKE THE OBJECT.

PLATE X.

*April—*

1. Make a book cover for bird notes.
2. Print in the book the names of the birds you have seen near the school.
3. Print a stanza on birds or flowers, on one page of the book.

*May and June—*

1. Make a program for the last day of school and decorate the cover in water colors.

**Outline A.***September—*

1. Paint a color scale of red, red orange, orange, yellow orange, yellow, yellow green, green, blue green, blue, blue violet, violet. Match colors of standard colored papers.
2. Paint sprays of leaves and flowers.

*October—*

1. Paint leaves and fruits.
2. Draw leaves and fruits

*November—*

1. Make candle shades.
2. Make blotter pads.

*December—*

1. Boys—Make a letter opener or a whisk broom holder of wood.
2. Girls—Stencil a curtain border or a pillow cover.

*January—*

1. Draw common objects in light and shade—jugs, tea pots, kitchen utensils, etc.

*February—*

1. Draw groups of same, in light and shade.

*March—*

1. Print a quotation of two lines on cover paper in a light shade—buff, grey or tan, or letter an Easter greeting on similar paper; these may be finished in water colors.

*April—*

1. Make a working drawing.

*May and June—*

1. Design a surface pattern from flowers or leaves; use as a design for a last day program or book cover. Include some lettering.

Throughout this course the choice of reference material is given. "The Manual Arts Books and Teachers' Manual," which accompanies them, D. C. Heath and Company, Chicago; "The Parallel Course," D. C. Heath and Company, Chicago; "The Applied Arts Books," Atkinson, Mentzer and Grover, Chicago; "Progressive Lessons in Art Education" (manual included), The Prang Educational Company, Chicago; "The Prang Text Books of Art Education," The Prang Educational Company, Chicago; "The School Arts Book," The Davis Press, Worcester, Massachusetts; "Talks on Drawing, Making, Painting and Decorating," Scott, Foresman and Company, Chicago.

## MANUAL TRAINING.

### GENERAL SUGGESTIONS.

The tools and equipment named in the following lists are for work in wood and the softer metals. To many craftsmen and manual training teachers this equipment would seem quite limited; however, it is sufficient to do many things, if the pupils are encouraged by teachers to plan methods by which difficulties caused by limited equipment may be overcome. This equipment may be made more complete as the demands arise for new tools.

### MANUAL TRAINING IN WOOD FOR RURAL SCHOOLS.

The equipment will necessarily vary with the number of pupils in a school. An excellent one sufficient to accommodate three pupils working at one time, and costing about twenty-five dollars, is as follows:

One bench, 2½ feet wide and 10 feet long, to be made by teacher and students; materials used, pine 2 inches thick for top, to be about 32 inches high, with three carpenter's vises on sides and end.

#### Tools—

- 3—14" Baily adjustable iron jack planes.
- 1—6" Baily block plane.
- 2—10" block saws.
- 2—¾" firmer chisels.
- 2—¼" firmer chisels.
- \*2—6" metal tri-squares.
- 1—framing square.
- 2—working gauges.
- 1—spoke shave.
- 3—sloyd knives.
- 2—hammers.
- 1—hatchet.
- \*3—screw drivers (3 sizes—3", 5", 7" blade).
- \*3—6" wing dividers.
- 1—½" round cabinet file, 8".
- 1—22" rip saw, No. 8; any good make.
- 1—22" cross-cut saw, No. 8; any good make.
- 2—coping saws, with two blades.
- 1—sliding T bevel.
- 1—½" firmer gouge. (Buck Brothers' is good.)

- 1—1" firmer gouge.
- \*2—braces, 7" sweep.
- \*1—drill bit, No. 4/35.
- \*1—drill bit, No. 8/32.
- 1—auger.
- 4—auger bits— $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{5}{8}$ ", 1".
- 1—Rose counter sink.
- 3—nail sets.
- 3—wood hand screws, 7" opening.
- 1—carborundum stone, medium and fine.
- 1—oil can.

For one pupil, or even two, working at one time, the cost would be about fifteen dollars.

In general, there could be lessons upon the construction, use and care of the simple measuring, cutting and general tools named in the list above. Also, exercises based on the methods of using the tools for measuring of widths, cutting off, ripping, planing, boring and the construction of various necessary joints that enter into the pieces of work being done.

It is not supposed that the teacher should be especially prepared to do this work, but any one acquainted with the ordinary wood working tools can successfully introduce and carry on manual training of this kind in the grade school, increasing the interest in school work, bringing the work in touch with home and community life, aiding in making of games that can be played at home and on the play grounds; in fact, covering many interesting fields that will assist in beautifying and enriching the home, school and individual.

As the pupils become more experienced, technical requirements may be made more exacting; the constructive work more artistic, which means more thinking and more definite planning of the work before the construction is undertaken. Some of the more advanced exercises should be as follows:

Cutting of simple curves, chiseling, joining, uniting with glue, cutting of various angles, smoothing of surfaces of moderate size.

The work should not be mapped out definitely for all pupils, but a few interesting books of games for boys, catalogues of Mission furniture, that can be had for the asking, will aid very materially in selecting pieces that will be artistic and useful after completion. Some simple objects that can be made in this way are:

Bread board, plain bench, mission tabourette, plant stand, waste basket, magazine stand, book shelves, match holder, ironing board, knife box, match scratcher, coat and hat racks, sled.

**MANUAL TRAINING IN METAL FOR RURAL SCHOOLS.**

Equipment, costing about six dollars, as follows:

- 1—pr. tin snipes, 2½" jaw.
- 3—8 oz. ball hammers.
- 2—small alcohol lamps.
- 3—prs. 5" flat nose pliers.
- 2—blow pipes.
- 2—8" flat files.
- 2—6" half round files.
- 1—8" rat tail file.
- 1—6" slim triangular file.

Materials needed:

- Bottle commercial nitric acid.
- Black asphaltum paint.
- Hydrochloric acid.

Soft sheet brass and copper in about the following gauges—28, 24, 20.

Note—Extreme care should be used in handling these poisonous acids.

All the tools and materials named above may be purchased of a local hardware firm. If not so obtainable, the local dealer will always send for such tools and materials as you may need.

Some of the tools really necessary in this equipment are omitted, as they are included in the wood working list. Those marked (\*), in the wood working equipment, are also necessary in the metal work. The wood working bench will be found a very satisfactory place to do the metal work; however, it may be done in an ordinary school room.

It is suggested that both lines of work be introduced at the same time, as a material lowering of expense will thereby result.

**REFERENCE.**

The simple processes in the work are well outlined in such inexpensive books as:

- "Art Craft for Beginners," Sanford, The Century Company, Chicago;
- "Copper Work," Rose, The Davis Press, Worcester, Massachusetts;
- "Foster's Elementary Wood Working," Ginn & Co., Chicago;
- "Goss Bench Work in Wood," Ginn & Co., Chicago.



## HUMANE EDUCATION.

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### GENERAL SUGGESTIONS.

The laws of the state require Humane education to be given the same as any other branch of study. It ought to be given a daily period on the program.

It is the duty of everyone to aid in the just and kind treatment of animals. The animal has a right to a life of comfort and happiness as long as it does not interfere with the life and happiness of one more useful than itself. The life of animals should never be taken for sport. It is cowardly and disgraceful to be unkind to helpless creatures.

It is not punishment that cures cruelty, but it is humane education of the young in patience, love, justice and kindness.

Talk *with* children, not *to* them. Induce them to ask questions, give their experience, tell animal stories, relate incidents, and thus to feel that they are factors in doing humane work.

Reference: "Dumb Animals and How to Treat Them," Whitehead.

### FIRST GRADE.

Central thoughts—Friendship, kindness and helpfulness. Show the child that the animal, like himself, has eyes, ears, nose, mouth, brain and nerves; that the animal uses them for the same purposes the child uses his senses; that he enjoys and suffers in much the same way the child does; and that we can and should help the animal to enjoy his life.

Develop the thoughts—how the child can help the horse; the birds; the dog; the cat.

Observe and study, homes of domestic animals; of wild animals; how each takes care of its young; what animals eat; what animals do for men; what man can do for animals.

Give out-door excursions for animal studies.

Bring animals to school for observation and study.

Tell animal stories and have children do the same.

**SECOND GRADE.**

Central thought—Treat the lesser animals as you would like to be treated.

Animal homes and their care—Barns, sheds, poultry houses; wild animal homes, birds' nests.

How animals enjoy life—Liberty; their young, food, play, friends.

How animals suffer—Confinement, hunger, thirst, cold, heat, sickness, enemies, filth, etc.

How animals help us.

How we may help animals.

Traits of animals that teach us good lessons.

How would you teach an animal to mind? Not to be afraid?

Read and tell animal stories. Read and discuss "Black Beauty," "Dog of Flanders," "Rab and His Friends."

**THIRD GRADE.**

Central idea—Man could not live on the earth without the aid of the lesser animals.

Read and tell animal stories.

Study how animals help us: supplying food, supplying clothing, planting seeds, preservation of farm crops, preservation of forests, actions of kindness and cheerfulness.

What we owe to the lesser animals: friendship and kindness, food and shelter, protection from abuse, teach them how to secure these things.

Bird protection: food and shelter, causes of destruction, how to help the birds.

Have children get opera glasses and cameras when they can for better observation of animals.

Have them destroy bean shooters, slings, air guns, twenty-twos, and other instruments of cruelty.

Study construction of buildings: for horses, poultry, cows. What is necessary in such buildings?

Make excursions to study such buildings with reference to light, air, warmth, cleanliness and location.

Read and discuss good books on animals.

**FOURTH GRADE.**

Central idea—The animal is just what we make him.

Study the animal's individuality: disposition, good or bad and why, effect of food on the animal, effect of housing or shelter, effect of cruel treatment, of kind treatment.

What causes these traits: balkiness in horses, bucking in bronchos, cross and dangerous dogs, animals' fear, animals' sickness, animals' love of us, their trust in and obedience to us?

Rights of the lesser animals: food, shelter, happiness, liberty, kindness, justice and to be kindly taught.

How we may help the lesser animal.

Effect of kindness on our lives.

How does kindness affect other animals?

Read animal books and discuss animal stories.

Connect animals with other studies and thus add interest to them. How may the animals' health affect our own?

#### FIFTH GRADE.

Central thought—An injury to the lesser animal is an injury to ourselves.

Connect composition, geography, reading, spelling, drawing and nature study with humane treatment of the lesser animals. It is well to often set apart an entire day to be so used.

Animal excursions to farms, orchards, dairies and gardens.

In what ways are we injured by not properly feeding and housing the lesser animals?

Show relation of health between lesser animals and ourselves.

Show how it hardens the heart to be cruel and unkind.

Find out number and value of domestic animals in the United States.

How may these values be increased or diminished?

#### SIXTH GRADE.

Central thought—Justice and kindness to every living creature.

Extend the thought and work of the fifth grade.

Excursions to farms, forests, barnyards, with maps, drawings and compositions on observations. Always take notebooks and make notes to be extended later.

Value of domestic animals to the farmer; value of bird life to farmer; destructive animals and how to prevent the losses caused by them; how to destroy useless and injurious animals.

Dairy products: how to care for the cow, food and shelter, cleanliness, health, kindness, effect of improper care, impure milk.

Amount produced by the horse? Consumed by him? How diminished? How increased? Same with reference to other domestic animals. What are animal rights?

**SEVENTH GRADE.**

Central thought—Our duty as the most intelligent animal with power over all other animals.

Our responsibility in determining what plants and animals shall live, how they shall live and how much they shall suffer and enjoy.

Effect of cruelty on the animal, on human beings, on the community.

In what ways are animals like men? Men like animals? How unlike?

Relations of wild animals to each other, to plants, to men.

How have wild animals been domesticated?

Hunting and fishing for sport, destruction and preservation of game; cruelty in it. What animals are protected, and why?

Wearing feathers and furs: a savage custom, cost to the nation in loss of crops and forests. Better and more civilized way to dress than in feathers and furs. How can we aid in stopping cruelty to animals?

How do human rights compare with those of animals? Extend work of sixth grade.

**EIGHTH GRADE.**

Central thought—The supreme test of civilization is the degree to which we protect the abused, neglected, helpless and dependent, including the lesser animals. History of humane laws and education, laws for the protection of children and animals.

State Bureau of Child and Animal Protection: how composed, powers and duties.

Rights of children substantially the same as those of the lesser animals: home, food, clothing, education, health, happiness, protection, work, rest, play, kindness.

Neglect or abuse injures the state, how? Our duty toward the lesser animals.

Aid given by animals in reaching present degree of civilization: in war, in travel, commerce, agriculture, food products.

Is a man who abuses a child or lesser animal a safe man in the community? Give reasons.

Assign topics for readings, talks and compositions.

Teach "Ancient Mariner," by Coleridge.

## NATURE STUDY AND ELEMENTARY AGRICULTURE.

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### GENERAL SUGGESTIONS.

There is an evergrowing tendency to make the teaching of rural schools more efficient by teaching more in terms of the country and of country life, to lay more stress on the maxim that education should grow out of the lives of the people and back into their lives. This does not mean to throw out of the school the ordinary subjects of the curriculum, nor is it the wish to decry their value. It seems desirable, however, to emphasize the need for an effort which will cast them anew, leaving out much, perhaps, that is useless and bring in some things that are useful and vital to the child. We need, also, to emphasize the necessity of an awakening to the fact that the three "R.'s" are not the end of education, but only a means to an end, that to really make them vital we must connect them with the child's experience, environment and life, something which will make the child realize on them. We must emphasize the need of teaching country-life subjects, of the fields, woods, streams and mountains, and all that lives therein. All the children will not live in the country, but the majority will. Why give all a misfit education which fits none of them to live there; the ideals should be changed so as to put the child more in touch with the country and to make him better prepared to live there. Professor Warren, of the Cornell Agricultural college, tersely expresses the situation by saying, "While it may not seem desirable to make farmers, it does seem desirable to stop unmaking them."

If the children of the country of to-day are trained natureward and farmward they will have a wider base of knowledge, wider sympathies in the future, to help them in all their occupations and activities of the farm and home. Children who are stimulated to study nature, to see what they are looking at, will think for themselves, interpret the facts of nature, and this will lead to knowledge and principles which later may be applied in their occupations. Boys trained thus have already opened wide the eyes of their fathers, not so trained, by the increased yields which the application of principles thus learned have brought them.

Nature study is something more than another subject to be added to a list already long. It is not science, nor knowledge, primarily. It is spirit, a spirit which should be part of the

teaching of every subject of every schoolroom. Its first aim should be to place the child in first hand, sympathetic relation with the good and common things of his outdoor world, to inspire him to have a living and ever-increasing interest in everything that lives and is. Then the country will have a new and greater meaning to the people of the country. Then the country will be the ideal home. And this must come if farming and farm life are to be permanent. A better agriculture alone will not improve the conditions as they are, will not make for the greatest content. Nature study and elementary agriculture will make for a greater knowledge of the country and farming, but they should also do more than that. We need better farming, but we also need better farm homes, a better country life. The new education must touch the home and the business by interesting the country children in the country, in farming and the home, by teaching in terms of the things which make these up.

In teaching nature study and elementary agriculture, it is therefore, important to carefully consider the aims and point of view here expressed. In the lower grades the work should be mainly observational. It should concern itself with acquaintanceship with the commonest animals, plants and inanimate things of the child's everyday world. With the older children more stress can be laid upon the significance of the facts observed, while in the upper grammar grades the entire procedure as outlined below may be followed. Here, too, the agricultural side can be brought in, the relation of the facts learned to the business of farming. Everywhere, with everything, direct, first-hand observations by the children are to be emphasized, and some attempt to have these interpret the significance of the facts learned should be made as suggested. The functional, not the structural, side should be emphasized. Study the thing as it lives and is, in relation to its environment. In general, it will be found to be a good plan to follow the procedure here outlined:

1. Direct observation of the object.
2. The important fact.
3. The significance of the fact.
4. The relation this may have to other facts that have been learned.

The teacher is urged to look to her environment for material. We believe that the commonest things of the outdoor world form the best material for nature study; that the hills and plains, the streams, lakes and sky, the fields, woods and roadsides, and all that lives there, hold many secrets, which are all the more mysterious because they seem so familiar:

and which are all the more valuable since they are so near to the child. The school garden is one of the best laboratories for the study of nature. Here first-hand training in turning soil, planting and rearing plants can be given. Every country school ought to have its school garden. It would serve as a great stimulus to make the schoolground area more cheerful. Surely, the average schoolgrounds need it.

The following outline is suggested for the teacher in teaching nature study and agriculture:

*Lower Grades—Fall and Winter*—Fall work in the garden and on the farm. The maturing of growth. The office of the flower. The production of seed. Dispersal of seeds and fruits. Kinds of farm and garden fruits. Uses of fruits. The storage of crops. The harvest on the farm. Preparations for winter. The ripening of growth in plants. Autumnal coloring and the fall of leaves. How plants spend the winter. The cutting off of the food supply for animals. The migration of birds. Insect studies. Common butterflies and moths. Wasp, hornets and bees. Insect homes. How the reptiles spend the winter. How the four-footed animals spend the winter.

*Weather Observations*—Studies of the skies. Rain, hail, snow, frost and ice. The class calendar. Winter studies of trees. Studies of winter outlines, buds, color of trees. The non-migratory birds, how they live. Bird and animal protection. Winter feeding of birds. Hibernation of animals. The preparations of the farmer for winter. Winter occupations of the farmer. Studies of domestic animals. The poultry yard. Studies of chickens, pigeons, turkeys, horses, swine, sheep and cows. Domestic pets. Observations of actions and characteristic movements of all these animals, their color, parts, covering. Food and manner of feeding. Care. Homes and habits. Uses to man.

*Studies of Plants*—Commonest house plants. Planting of seeds in the schoolroom of beans, peas, grains. Sprouting of seeds and behavior of seedlings. Manner of coming out of the ground. Characteristic parts of plants. Needs of plants as regards moisture, warmth, light and air.

*Spring and Summer*—The return of spring. Temperature changes and their effects on all nature. Spring studies of trees and shrubs. The growth of buds. The growth of trees and plants. The budding and blossoming of trees. The awakening of all life in field, woods and streams. Preparations on the farm. The effect of winter on all life of the farm. Plowing, harrowing and fitting of soil. Planting of the early crops.

Garden preparations. Importance of thorough preparation and fitting of the soil. Preparation for the early crops. Planting of early salad and flower crops. Cultivation and watering of gardens. Care of same. Enemies and friends. Insect pests. Common weeds. Names and recognition of native flowering plants. Preparations for Arbor Day. Cleaning up the school grounds. Cleaning up the home grounds. The improvement of home and schoolgrounds. Planting trees, shrubs and flowers on the schoolgrounds and around the home. The return of the birds. Recognition and names. Studies of song and plumage. Nest building and rearing of young. Food getting. Life habits. Observation of hen and chickens. Young animals on the farm.

*Upper Grades—Fall and Winter*—Insect studies. Insect homes. Galls. Homes of wasps and hornets. Insects of garden and farm. Beneficial and harmful insects. Harm done by insects to fruit, foliage, grain and root crops. Sucking and biting insects. Remedial and preventive measures. Methods of spraying. Importance of burning all weeds and rubbish. How the grasshopper may be fought. Insects in relation to the health of the community. Mosquitoes and house-flies. Methods of warfare against these. Sanitary measures on the farm. Birds as insect and weed destroyers. Relation of insects to seed and fruit production. Adaptations of flowers to secure insect visitors. Adaptations of seeds and fruits for dispersal. Study of the common weeds of the region and methods of fighting these. No room for both weeds and crops. Studies of plant societies. Studies of native plants and their adaptations. How these fit them to live under the peculiar conditions of their environment. Review of needs of plants and how plants grow. Plant forms. Influence of plants on the habitableness of the earth. Value of plants. Value of forests in conserving moisture and soil. Principles of forestry. Value of forest protection and conservation. Uses of trees. Principal crops of the region. How grown. Their harvest, storage, sale and use. Harvest of crops grown in the school garden. Seed collection and selection. Preparations on the farm for winter. The principles governing the feeding and care of animals. How man makes use of animals. The dairy industry. Studies of dairy breeds of cattle. Feeding, care and management. Care and handling of milk. The products of milk. The improvement of dairy animals. The Babcock milk test. Management of animals for other purposes. The cattle industry. Care, management, feeding and improvement of cattle, horses, sheep, swine. How wild animals spend the winter. Storage of winter food. Protective adaptations. Winter habits. Study of



animal tracks. Winter pelage of the fur-bearers. Methods of the trapper. Game laws and the protection of animals. Destruction of harmful species. Special study of the rodents. Economic aspects. Home life of the farmer. Improvement of home. House conveniences.

*Spring Term*—The return of spring. Weather changes and effect on all nature. The relation of climate to the crops grown in the region. Protective measures against frost. Changes in plant life. Adaptations of the native plants in regard to climate and seasonal changes. The return of the birds. Bird calendar. Spring plumage of birds. Song. Life habits. Nests and rearing of young. Food and manner of getting. Birds in their relation to man. Continuation of studies of four-footed animals. Studies of life histories. Studies of pond and stream life. Hatching and growth of eggs of frogs and toads. Water insects. Study of reptiles and fishes. Special study of the toad. Studies of animals in relation to soil making. Study of angle-worms as soil makers. Plants as soil builders. The relation of plants to the soil. Agencies concerned in soil making. How soils are carried. Work of streams and glaciers in making and carrying soils. Studies of topographical features of the region. Their relation to the agriculture of the region. Uses and properties of soils. Spring preparations on the farm. Plowing and fitting the land. Value of thorough fitting of the land and preparations of the seed-bed. Principles of soil improvement. Principles of rotations. Value of alfalfa as a soil improver. Principal crops of the region and their management. Principles of crop planting. Subsequent cultivation. Cultivation to kill weeds and to conserve moisture. The soil mulch. Spring work in the garden. Principles of the propagation of plants. Preparations of the garden. Uses of fertilizers. Planting of common vegetables and flowers. The value of a home vegetable garden. How to make the home and school grounds beautiful. Orderliness and cleanliness the first means. Subsequent improvement and beautification. Varieties of shrubs and trees best suited for the region. Transplanting of native specimens to the home and schoolgrounds.

*Poultry Husbandry*—The principal breeds and varieties. Care and management of poultry for eggs and for meat. Construction of poultry houses. Rearing of young. Care of young. Improvement of farm fowls.

*Special Study of Colorado as a Great Farm*—Natural features of the state and their relation to agriculture. Climate as influencing the kinds of crops grown. Kinds of soils and crops

best suited to these. Agricultural industries best supported under the conditions. Limits these conditions place on agricultural production. Agricultural products imported into the state. Which of these may be grown to a larger extent in Colorado. The disposal of the surplus of production. Markets and transportation. Roads and railroads. The special package as a factor in selling products. Manufacture of products on the farm. Advantages of more diversified farming. Advantages of a special market.

*Special Study of the Following*—Fruit-growing, dairying and poultry husbandry.

As has been suggested, the above outline is a rough calendar of farm and garden operations of the year. Without doubt many of the suggestions will be new to the teacher and she is urged to make as great a study of nature and of agriculture as she can. She is urged to make use of the farms of the region and their management in the teaching of agriculture, to look to the farm for illustrations, problems and interpretations. She is asked to keep her eyes open to the many things Nature daily presents. By reading the books of such writers as Prof. L. H. Bailey, John Burroughs and Mrs. A. B. Comstock, she will catch the point of view and the necessary enthusiasm. This can be increased by tramping the open country as much as possible, by making companions of her boys and girls on these tramps. The following books will be found of great help to the teacher, yet she is warned not to make free use of them as text-books. The first few minutes in the morning will be found to be best for general nature study work with the school. Longer periods, for example, on Friday afternoons may be used for school garden and agricultural work.

Books recommended for teaching nature study and elementary agriculture:

"Rocky Mountain Wild Flower Studies," B. O. Longyear; B. O. Longyear, Fort Collins, Colorado.

"Agriculture for Beginners," Burkett, Hill and Stevens; Ginn and Company, Chicago.

"Elementary Principles of Agriculture," Ferguson and Lewis; Ferguson Publishing Company, Sherman, Texas.

"First Principles of Agriculture," Goff and Mayne (good on weeds); American Book Company, Chicago.

"Elementary Principles of Agriculture," Hatch and Hazelwood; Row, Peterson and Company, Chicago. (Note—This book contains at the end of each chapter a number of arithmetical problems, which teachers will find very useful.)

"One Hundred Lessons in Agriculture," A. E. Nolan; Acme Publishing Company, Morgantown, W. Va.

"Elements of Agriculture," Warren; The Macmillan Company, Chicago.

"Rural School Agriculture," Davis; Orange Judd Company, Chicago.

"Agriculture Through Laboratory and School Garden," Jackson and Daugherty; Orange Judd Company, Chicago.

"Lessons with Plants," L. H. Bailey; The Macmillan Company, Chicago.

"Botany," L. H. Bailey; The Macmillan Company, Chicago.

"The Nature Study Idea," L. H. Bailey; Doubleday, Page and Company, New York City.

"The Principles of Agriculture," L. H. Bailey; The Macmillan Company, Chicago.

"Manual of Gardening," L. H. Bailey; The Macmillan Company, Chicago.

"First Studies in Plant Life," Atkinson; Ginn and Company, Chicago.

"Insect Life," Comstock; D. Appleton and Company, Chicago.

"Bird Life," F. M. Chapman; D. Appleton and Company, Chicago.

"American Natural History," Hornaday; Charles Scribner's Sons, Chicago.

"Elements of Botany" (Rocky Mountain edition), Bergen; Ginn and Company, Chicago.

"Soils and Fertilizers," Snyder; The Macmillan Company, Chicago.

"Arid Agriculture," Buffum; B. C. Buffum, Worland, Wyoming.

"The Cereals in America," Hunt; Orange Judd Company, Chicago.

"The Chemistry of Plant and Animal Life," Snyder; The Macmillan Company, Chicago.

"Soils," Lyon and Fippin; The Macmillan Company, Chicago.

Write to the director of the Experiment Station at Fort Collins, and ask him to send a list of the publications available for distribution. Select those that will be useful and request that they be sent to the school.

The following Farmers' bulletins (\*) will be sent free on application to your senator or representative in Congress, or to the secretary of agriculture, Washington, D. C. State that they are wanted for school use:

- Bulletin 28—Weeds and how to kill them.  
 “ 34—Meats: composition and cooking.  
 “ 35—Potato culture.  
 “ 42—Facts about milk.  
 “ 52—The sugar beet.  
 “ 54—Some common birds.  
 “ 55—The dairy herd.  
 “ 59—Bee keeping.  
 “ 62—Marketing farm produce.  
 “ 63—Care of milk on the farm.  
 “ 85—Fish as food.  
 “ 86—Thirty poisonous plants.  
 “ 93—Sugar as food.  
 “ 99—Insect enemies of shade trees.  
 “ 106—Breeds of dairy cattle.  
 “ 121—Beans, peas and other legumes as food.  
 “ 126—Practical suggestions for farm buildings.  
 “ 128—Eggs and their uses as foods.  
 “ 134—Tree planting on rural schoolgrounds.  
 “ 138—Irrigation in field and garden.  
 “ 142—Principles of nutrition and nutritive value of food.  
 “ 154—The home fruit garden; preparation and care.  
 “ 155—How insects affect health in rural districts.  
 “ 157—The propagation of plants.  
 “ 158—How to build small irrigation ditches.  
 “ 166—Cheese making on the farm.  
 “ 173—Primer of forestry (part I, The Forest).  
 “ 175—Home manufacture and use of unfermented grape juice.  
 “ 177—Squab raising.  
 “ 181—Pruning.  
 “ 182—Poultry as food.  
 “ 183—Meat on the farm; butchering, curing and keeping.  
 “ 185—Beautifying the home grounds.  
 “ 186—Exercises in elementary agriculture.  
 “ 195—Annual flowering plants.  
 “ 196—Usefulness of the American toad.  
 “ 197—The importation of game birds and eggs for propagation.  
 “ 198—Strawberries.  
 “ 199—Corn growing.  
 “ 200—Turkeys.  
 “ 201—Cream separator on western farms.  
 “ 203—Canned fruits, preserves and jellies.

- Bulletin 205—Pig management.  
 " 215—Alfalfa growing.  
 " 218—The school garden.  
 " 228—Forest planting and farm management.  
 " 235—Preparation of cement concrete.  
 " 236—Incubation and incubators.  
 " 241—Buttermaking on the farm.  
 " 242—An example of modern farming.  
 " 243—Fungicides and their uses in preventing diseases of fruit.  
 " 245—Renovation of wornout soils.  
 " 248—The lawn.  
 " 255—The home vegetable garden.  
 " 256—Preparation of vegetables for the table.  
 " 257—Soil fertility.  
 " 263—Practical information for beginners in irrigation.  
 " 266—The management of soils to conserve moisture.  
 " 270—Modern conveniences for the farm home.  
 " 287—Poultry management.  
 " 293—The use of fruit as food.  
 " 295—Potatoes and other root crops as food.  
 " 298—Food value of corn and corn products.  
 " 332—Nuts and their uses as food.  
 " 347—The repair of farm equipment.  
 " 348—Bacteria in milk.  
 " 358—Primer of forestry (Part II, Practical Forestry).  
 " 359—Canning vegetables in the home.  
 " 363—The use of milk as food.  
 " 367—Lightning and lightning conductors.  
 " 375—Care of food in the home.  
 " 377—The harmfulness of headache mixtures.  
 " 385—Boys' and girls' agricultural clubs.  
 " 387—Preservative treatment of farm timbers.  
 " 389—Bread and bread-making.  
 " 391—Economical use of meat in the home.

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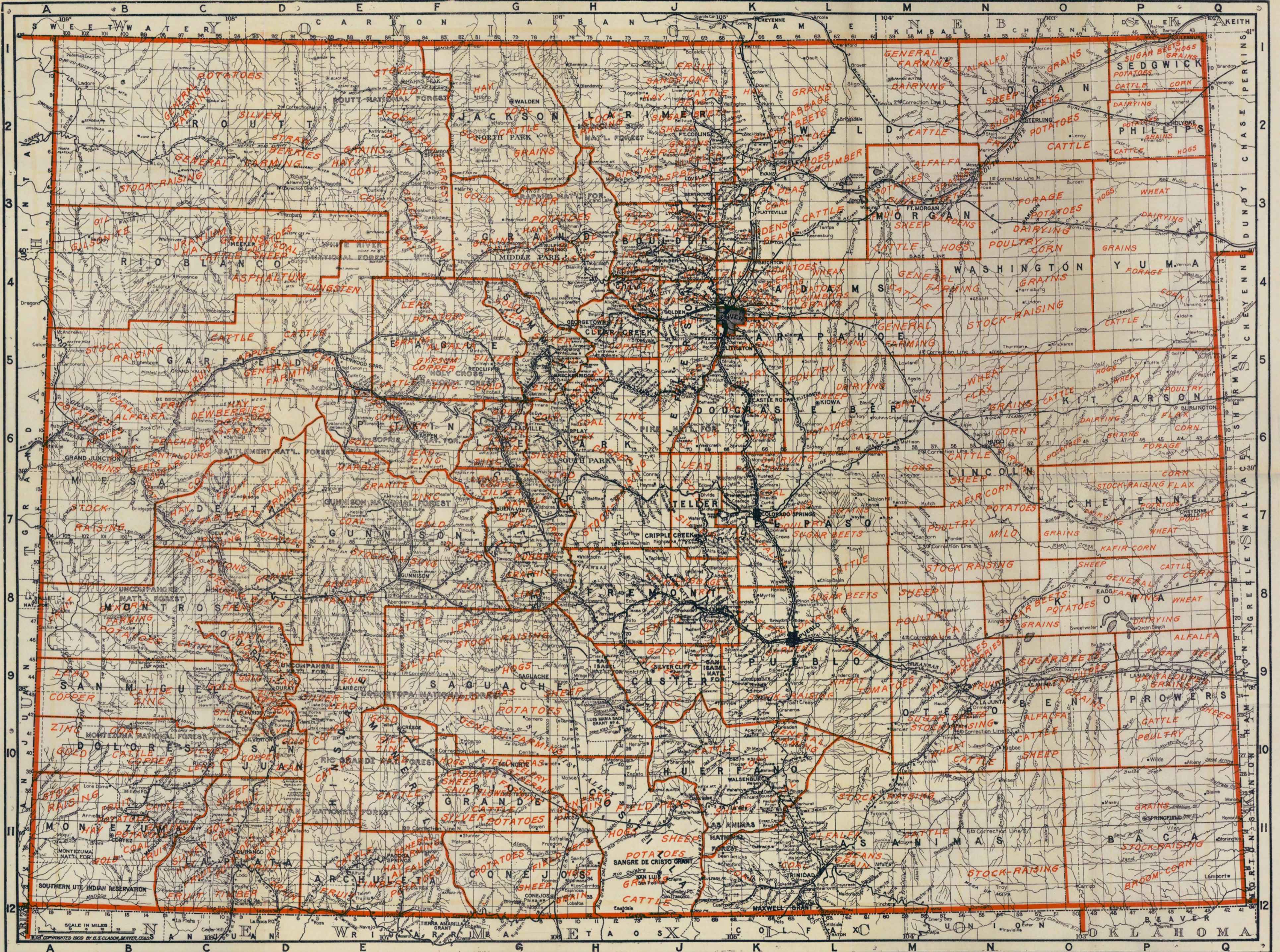
\* It is suggested that these bulletins be used as the nucleus of a library for circulation in the neighborhood. Their usefulness, in the school, is not confined to nature study and elementary agriculture alone.

LIBRARY OF THE  
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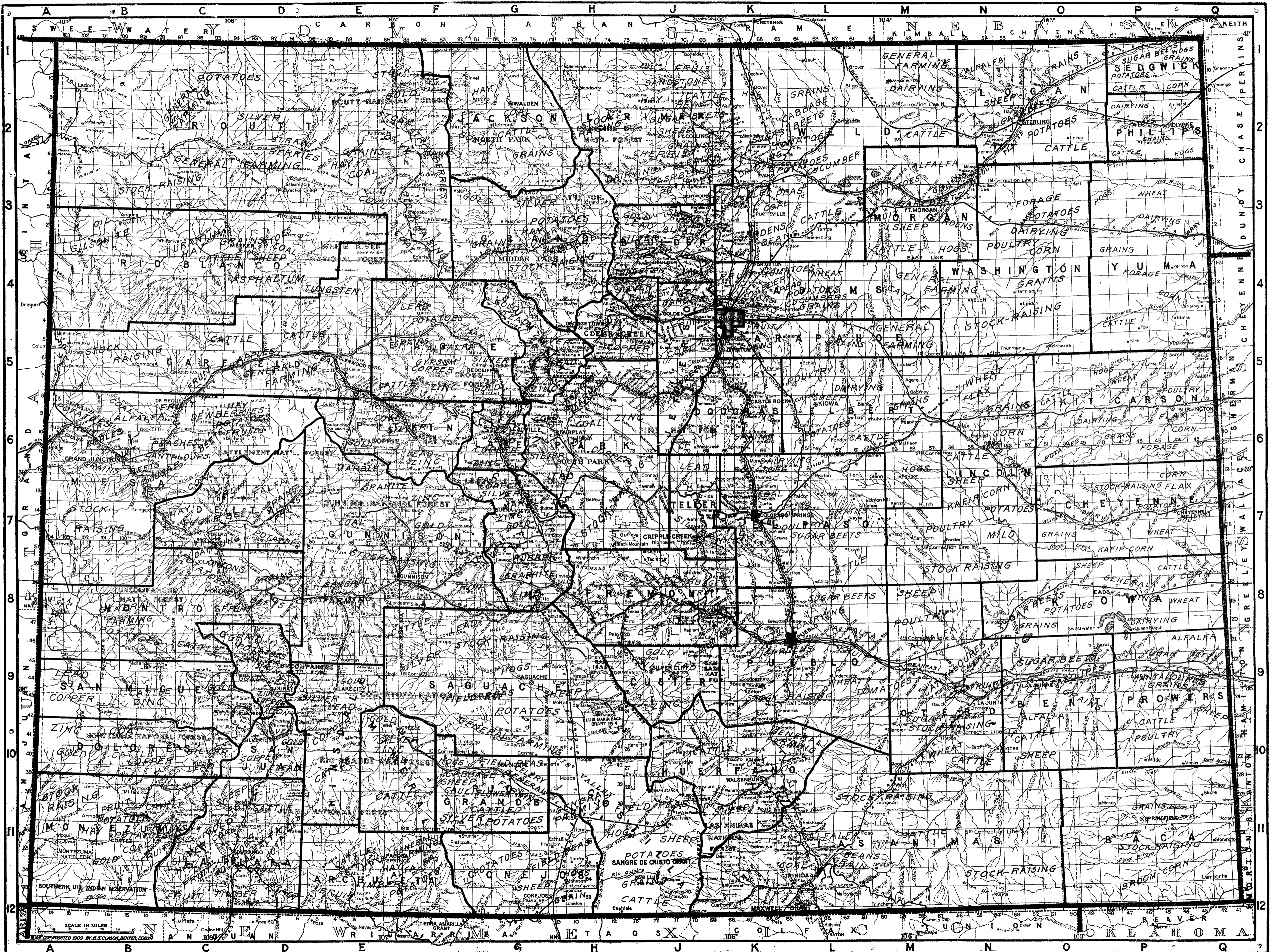
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# CLASON'S GUIDE MAP OF COLORADO



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