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COURSE OF STUDY

FOR

THE PUBLIC SCHOOLS OF COLORADO

ADOPTED BY

THE BOARD OF EDUCATION OF THE STATE OF COLORADO

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1926

VOLUME II

SECONDARY AND HIGHER EDUCATION

ADOPTED BY THE BOARD OF EDUCATION OF THE STATE OF COLORADO



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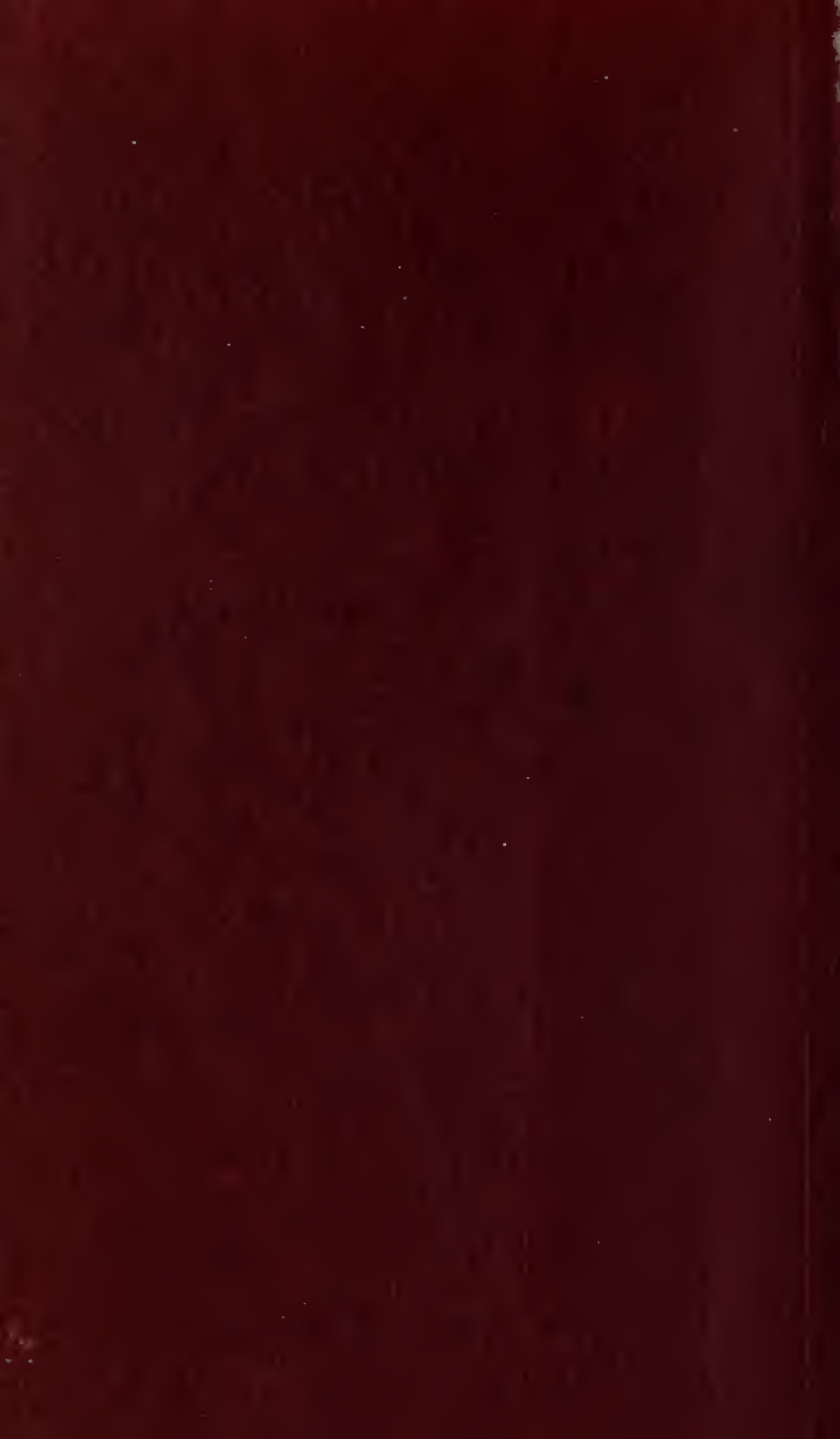
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A
COURSE OF STUDY
FOR
THE PUBLIC SCHOOLS
OF COLORADO

ISSUED BY
THE DEPARTMENT OF PUBLIC INSTRUCTION
MARY C. C. BRADFORD, Superintendent

1926

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VOLUME II

OUTLINE FOR JUNIOR HIGH
SCHOOL COURSES
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*The power to think straight, work hard, play fair, and
love much is the test of an educated,
efficient human being.—M.C.C.B.*

Prepared by
MARY C. C. BRADFORD
AND CO-OPERATING EDUCATORS

1926

DENVER

NOTICE

Teachers of Colorado:

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Mary C. C. Bradford.

State Superintendent of Public Instruction.

FOREWORD

One of the most striking developments in the reorganization of education now in process, is the change from the former eight years of elementary and four years of secondary work to the recently adopted Six-Three-Three plan in school organization.

Already the junior high school has won an undisputed place in the school system because of its flexible, experimental and inclusive methods. It provides at once academic and vocational help, links school activities to those of the community, and makes the child realize *present* citizenship.

Colorado has cause for self-congratulation in the fact that this new movement found a ready response among the school people of this state and that therefore junior high school buildings and organization exist in large numbers throughout the commonwealth.

Because of its ever increasing importance, it has seemed wise to devote one entire volume to material and methods of instruction in this part of the school system.

Mary C. C. Bradford.

State Superintendent of Public Instruction.

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OUTLINE

OF

ENGLISH

SEVENTH GRADE

Aims

ORAL

WRITTEN

1. To encourage pupils to talk freely on account of genuine interest, but always with a definite and clearly formed plan in the mind of the teacher for improving their use of language.

2. To require equally good English in all classes.

3. To develop distinct articulation, a pleasing tone, correct posture and freedom from self-consciousness.

4. To require complete sentences.

5. To eliminate the errors in speech assigned for correction in this year and to emphasize the correct forms drilled upon in preceding years.

6. To strengthen the sentence sense and discourage the superfluous use of "and," "then," and "so," but with a definite effort to secure proper transition as a means of increasing fluency.

7. To continue emphasizing orderly arrangement of sentence material with much attention to developing ability to stick to the point and to show a definite beginning, middle and end.

8. To cultivate the desire to speak well.

1. To secure mastery of the technicalities assigned for these years and to emphasize those already taught.

2. To require equally good written English in all classes in which writing is done.

3. To insist upon neatness, good arrangement, good penmanship and correct spelling in all written work.

4. To secure the sentence sense and strengthen the paragraph sense by requiring numerous brief compositions, each of which should show a definite beginning, middle and end.

5. To continue developing the ability to write and address letters. These should show an increase in difficulty of assignment over those written in the preceding year.

First Half Year—Oral Composition

One period a week should be devoted to formal talks given by pupils before the class. These talks should be carefully prepared but should not be memorized.

The habit of correct oral expression should be formed through the recitation of studies and not language alone. The statements must be definite and complete. The teacher should not supply part of the pupil's answer or statement and should not repeat pupils'

answers. A short period each day should be given to corrective drills and exercises.

Oral reproductions from outlines should be given without assistance from the teacher. Pupils should criticize one another's work.

Written Composition

Continue the work of sixth year. In this year there should be less written reproduction than formerly but an increased amount of original work. Pupils should be required to give orally and in writing condensation or summaries of articles they have read.

Assignments for written invention should usually be made from topics that have previously been discussed in oral lessons. Not all oral exercises should be continued in writing. The opening paragraph or paragraphs may be read and pupils requested to finish the selection.

Letter writing should include various kinds, such as: formal and informal invitations, friendly and business. Letters written in one lesson may be answered in another. Letters may consist of the following: description, persuasion, or explanations.

Some outlining should be done independently.

Continue copying, dictation and writing from memory.
Technicalities:

1. Arrangement.

The Outline.

2. Language.

A. Capitals.

Review.

B. Punctuation.

Semicolon before introduction to an example, as; Colon before a list of particulars.

3. Use of dictionary and reference books:

A. Abbreviations used in defining words as: a., v., adv., v. t., v. i., conj., sing., plu.

B. Exercises in opening dictionary promptly to a given word.

C. Syllabication (pupils should have had much practice in the spelling classes in dividing words orally into syllables).

Pupils should take an active part in correcting papers. By correcting others' papers will help them in seeing their own mistakes and will prove very valuable. Papers corrected by pupils should always be examined by the teacher before being returned to the original writers.

Work in dictation, copying, and writing of selections from memory should be continued.

Technicalities:

1. Arrangement.

2. Language:

a. Capitals.

Rules for capitalizing a title.

Rule: Capitalize the first word in a title and all other words except prepositions, conjunctions and articles.

b. Punctuation:

1. Comma with words, phrases or clauses placed out of their natural order.

2. Comma with appositives.

3. Use of dictionary and reference books:

a. Synonyms, antonyms.

b. Use of index and table of contents.

c. Use of encyclopedia.

Oral Composition—Second Half

Continue work outlined in first half. In the last half year there should be a concentration upon the elimination of weak spots in order to round out the entire course.

Special attention is called to the following points that should guide teachers in determining the character of the oral work being done in this grade. The teacher's judgment should be based on the pupil's oral work in all classes as well as on that in the regular English periods:

a. Use of grammatically correct English in the daily work in all classes.

b. Vocabulary, pronunciation and enunciation.

c. Logical order and accuracy of statement.

d. Forcefulness and ability to command interest.

e. Effort to talk effectively and to progress irrespective of class standards.

Corrective English

Drill upon the use of so in negative expressions, not so strong instead of not as strong.

Drill upon the proper use of got.

Drill upon correct uses of shall and will in:

- a. Simple declarative sentences.
- b. Questions.
- c. Subordinate clauses.

Drill upon the correction of the dangling participle, "walking to school, a furniture wagon broke down."

Drill upon the tense of the infinitive: "I meant to write last month." "I ought to have written long ago."

Drill upon the correct use of some and somewhat.

Drill upon the use of the present tense for present facts and unchangeable truths.

Drill upon number of verb with collective noun as subject.

Drill upon the possessive case before a gerund: "Please excuse my not coming today."

Drill upon explanatory and restrictive clauses.

Drill upon the correct use of comparative and superlative degree.

Drill upon the correct use of the pronoun in the following cases: "He knew that it was I." "He knew it to be me."

Grammar

Analyzing of sentences should be continued, and especial attention given to complex and compound sentences. Some time should be given to the parsing of nouns and pronouns. The conjugation of the verb to be, in all modes and voices, should be insisted upon. The conjugation of other verbs may be taught.

First Half Year

1. Review clauses and parts of speech.
2. Review inflection of nouns and pronouns in seventh grade.

3. How nouns or pronouns may be used in the nominative case :
 - a. Subject.
 - b. Predicate nominative.
 - c. Direct address.
 - d. Appositive.
4. How nouns and pronouns used in objective case :
 - a. Direct object of the verb.
 - b. Object of a preposition.
 - c. Objective complement.
 - d. Indirect object.
 - e. Appositive.
5. How use in possessive case :
 - a. To show ownership.
6. Review of pronouns in the seventh grade.

Second Half Year

1. Verbs :
 - a. Classification as to
 1. Form, regular, and irregular.
 2. Meaning, transitive and intransitive.
 3. Use, main and auxiliary.
 - b. Person.
 - c. Number.
 - d. Agreement.
 - e. Tense.
 1. Present, past, future.
 2. Present perfect, past perfect, future perfect.
 - f. Principal parts.

These verbs should be given special drill: go, sit, set, lie, lay, eat, come, do, see, break, speak, freeze, rise, begin, drink, ring, sing, sink, swim, throw, know, grow, show, draw, take, drown.
 - g. Voice.
 1. Active.
 2. Passive.
 - h. Subjunctive forms in common use.
 - i. Correct use of shall and will.

2. Verbals, treated as parts of speech according to their use in sentences :
 - a. The infinitive ; its uses.
 1. As a noun.
 2. As an adjective.
 3. As an adverb.
 - b. The participle, present and perfect.
 1. Its nature and use (adjective).
 - c. The gerund (drill on the use of the possessive before the gerund).
3. The infinitive phrase.
4. The participle phrase.

The appreciation of good literature and pictures should be continued. Literature may be given in both poems and prose. At least two books every six weeks should be read and reports given either oral or written, both would be better. Two poems should be taught every month. One well selected picture should be studied through the entire month.

Suggested Pictures for Study

1. Washington Crossing the Delaware.....Leutze
or Emerson.
2. By the River.....Lerolle
3. Brightness of the Sea.....Kurszwelly
4. Road Through the Woods.....Farguharson
5. Ann Hathaway's Cottage.....Ball
or Wilson.
6. MorningDupre
7. Blessed DamselRosetti
8. Good Shepherd.....Plockhorst
or Lowell.
9. Mona Lisa.....Da Vinci
or Last Supper.....Da Vinci
or Horse Fair.....Bonheur

Suggested Book List for Reports

1. Man Without a Country.....Hale
2. Sketch Book.....Irving
3. A-Hunting of the Deer.....Warner

4. House of Seven Gables.....	Hawthorne
5. Ivanhoe	Scott
6. Last of the Mohicans.....	Cooper
7. Franklin's Autobiography.....	Franklin
8. Julius Cæsar.....	Shakespeare
9. Enoch Arden.....	Tennyson
10. Christmas Stories.....	Dickens
11. Deserted Village	Goldsmith
12. David Copperfield.....	Dickens
13. Merchant of Venice.....	Shakespeare
14. Vision of Sir Launfal.....	Lowell
15. Pilgrim's Progress.....	Bunyan
16. Deerslayer	Cooper
17. Eight Cousins.....	Alcott
18. Ancient Mariner.....	Coleridge
19. Tom Sawyer.....	Twain
20. Ben Hur.....	Wallace
21. Snowbound	Whittier
22. Evangeline	Longfellow
23. Tale of Two Cities.....	Dickens

Suggested Poems for Study

Brooke, Rupert.....	Soldier (War Verse)
Carman, Bliss.....	Vagabond Song (Golden Numbers)
Keats, John.....	Sweet Peas (Golden Numbers)
McRae, John.....	In Flanders Fields (War Verse)
Poe, E. A.....	To Helen (American Anthology)
Scott, Walter.....	My Native Land (Golden Numbers)
Tennyson, Alfred.....	Bugle Song (Golden Numbers)
Walter, H. A.....	My Creed (Heart Throbs)
Lincoln, Abraham.....	
.....	Gettysburg Address (Selections for Memorizing)
Wilson, Woodrow.....	Memorial Day Address—May 30, 1917
Bryant, W. C.....	To a Water Fowl (Golden Numbers)
Kilmer, Joyce.....	Trees (Homebook of Verse)
Kipling, Rudyard.....	Recessional (Collected Verse)
Lowell, J. R.....	Lines on Washington (Golden Numbers)
Sill, E. R.....	Opportunity (Golden Numbers)
Whitman, Walt.....	My Captain (Golden Numbers)
Whittier, J. G.....	Quest (Poems)

EIGHTH GRADE**Aims****ORAL****WRITTEN**

1. To encourage pupils to talk freely on account of genuine interest, but always with a definite and clearly formed plan in the mind of the teacher for improving their use of language.

2. To require equally good English in all classes.

3. To develop distinct articulation, a pleasing tone, correct posture and freedom from self-consciousness.

4. To require complete sentences.

5. To eliminate the errors in speech assigned for correction in this year and to emphasize the correct forms drilled upon in preceding years.

6. To continue emphasis upon recognition of the sentence unit and upon ability to secure transition by means of related words and proper connections.

7. To continue emphasis upon orderly arrangement and upon ability to stick to the point and to begin and end definitely.

8. To cultivate the desire to speak well.

1. To secure mastery of the technicalities assigned for this year and of those already taught.

2. To require equally good written English in all classes in which writing is done.

3. To insist upon neatness, good arrangement, good penmanship and correct spelling in all classes in which writing is done.

4. To secure the sentence sense and to continue the development of the paragraph sense by requiring numerous brief compositions, each of which should show a definite beginning, middle and end.

5. To continue practice in the writing and addressing of familiar and business letters.

Oral Composition

One period a week should be given to formal talks by the pupils.

The debate, which was taken up informally, in the seventh grade, should now be considered more earnestly. The arguments should be stated clearly and in good order. Such debates should be brief and upon simple topics. It is well to have one of the pupils to act as chairman. All rules should be followed. Criticisms at the close of the debate should be given and never discourage the debaters.

In history and other subjects there should be the beginning of reference study. Pupils should be assigned topics to investigate. These reports will furnish valuable material for oral expression. Different projects that will cause class rivalry is very valuable as long as it is given in a pleasant way.

The pupils, in the seventh and eighth grades, should be left in charge of a class recitation whenever possible.

Declamation of memorized selections should be continued in this as in other grades. Every effort should be made to obtain suitable vocal interpretation and careful posture.

Dramatization should be continued and they may dramatize plays they have written or plays they have studied.

Written Composition

Written composition should be continued from the seventh grade on through the eighth grade.

If the teacher knows at the beginning of the year what her pupils had been taught in previous years she could test their knowledge and know what drill work should be given or done over. The pupils in the fall should never be compared with the class that she promoted in the spring as it is unfair to them. She should drill upon the work until it is understood.

As advance work there should be continuation of the effort to produce more varied sentence structure, to substitute frequently the more smoothly, flowing complex sentence for the short, rather abrupt simple sentence. In this connection the teacher who plans well will be able to correlate grammar and composition.

There should be an effort to infuse into the themes written a few touches of what is commonly known as style. The pupils should have learned the value of the interesting opening and closing sentence.

This effort to obtain effectiveness should be made by suggestion rather than by special direction. They should read fine models and their attention should be called to the way in which effects are produced.

In the writing of description, the child should be taught to adhere to his point of view whether it be movable or stationary. He should learn from examples that the first sentence or sentences should give the general impression of the thing to be described and the details are to follow.

In writing explanation, he should make a list of the principal questions that a person would ask to understand the special topic. By arranging these questions in logical order he will have provided himself with an outline to follow.

The writing of both friendly and business letters should be continued.

Second Half Year—Oral Composition

The work of the first half year should be continued and enlarged with the purpose of establishing the pupil as firmly as possible, in acceptable speech habits. Give special attention to the elimination of redundant introductory words, as, now, why, say, listen.

The weekly informal talks should be continued. It is well to introduce some simple work in debate; topics could be taken from history or other subject. To save time and promote courtesy, a few simple parliamentary rules should be taught.

Informal discussions of rules of courtesy and simple rules of etiquette, good manners at school, home and church and other public places.

Written Composition

Continue work of first half year, increasing the assignments. Frequent, short themes should be written. Quality should be the aim, not quantity.

Technicalities:

1. Language:

A. Punctuation.

1. Comma, with a conjunction, to separate parts of a compound sentence.
2. Commas to separate parenthetical expressions from rest of the sentence.

B. Abbreviations.

1. p., pp., ch., vs.

Corrective English

Drill upon the forms:

attack

attacked

have attacked

Drill upon:

with whom

To him and me.

Whom did you send?

of whom

With you and me.

Between you and me.

to whom

Whom do you hear?

Emphasize:

He doesn't, not he don't.

Distinguish between the use of the adjective and the adverb:

"He sings well," not "He sings good."

"She looks beautiful." not "She looks beautifully."

Avoid the present tense of to say in reporting conversations:

"Then he said," not "Then he says."

Teach:

Shall I? Shall we? not Will I? and Will We?

Distinguish between the use of

Should and would

between and among

fewer and less

lead and led

further and farther

Drill upon correct use of the compound personal pronoun:

not "She and myself did it."

Drill upon the agreement of pronouns with antecedent, especially

"Everyone must do his own work," not "Everyone must do their own work."

Drill upon the agreement of subject and verb when phrase intervenes:

"A basket of apples was on the table," not "A basket of apples were on the table."

During this year, a more intensive study of the sentence, and of the parts of speech should be insisted upon. The pupils should be taught to classify sentences, distinguish between sentences and clauses and phrases. Parse noun and pronouns. Analysis of sentences. They should take these parts of speech and complete the study of them before taking other parts of speech.

Formal Grammar.

Review the work given in the sixth grade.

I. Sentences:

According to meaning.

1. Declarative.

2. Interrogative.

Review

3. Exclamatory.

4. Imperative.

According to form.

1. Simple.
2. Complex. New.
3. Compound.

II. Nouns:

1. Common.
2. Proper.
3. Collective.

A. Inflections.

1. Gender.
 1. Masculine.
 2. Feminine.
 3. Neuter.
 4. Common.

How gender is determined:

1. By distinguishing words in compound nouns.
2. By the ending.
3. By different words.
2. Number.
 1. Singular.
 2. Plural.

Rules for forming the plural.

3. Person.
 1. First person.
 2. Second person.
 3. Third person.
4. Case.
 1. Nominative.
 2. Possessive.
 3. Objective.

III. Pronouns:

1. Kinds.
 - A. Personal.
 - B. Compound personal.
 - C. Interrogative.
 - D. Relative.
2. Inflections of pronouns as same as nouns.
The agreement of personal pronouns.

Second Half Year**I. Adjectives:****1. Kinds.**

- A. Proper.
- B. Descriptive.
- C. Limiting.
- D. Definite.
- E. Indefinite.

2. Comparison.

- A. Degrees.
 - a. Positive.
 - b. Comparative.
 - c. Superlative.

II. Adverbs:**1. How used.**

- A. To answer the questions.
 - a. How.
 - b. When.
 - c. Where.
 - d. And in what degree.

2. Comparison.

- A. Degree.
 - Same as adjective.

III. Prepositions.**IV. Conjunctions:**

- 1. Coordinate.
- 2. Subordinate.
- 3. Correlative.

V. Interjections.**VI. Clauses:**

- 1. Dependant.
- 2. Independent.

VII. Parsing.**VIII. Analysis.****IX. Quotations—Direct and indirect.****X. Dictation.**

The appreciation of good literature and pictures may be secured through the study of poems, book reports and picture study. One picture a month should be studied thoroughly and two poems and more if possible. Two books every six weeks should be read and oral or written reports may be given.

Suggested Picture Study

1. The Lake.....	Corot
2. Whittier	_____
3. Leaving the Hills.....	Farquharson
or Pharoah's Horses.....	Herring
4. The Doctor.....	Fildes
5. Christ at Twelve.....	Hofmann
6. Blue Boy.....	Gainsborough
or Cherubs.....	Raphael
7. Pot of Basil.....	Alexander
or Along the Lane.....	Mauve
8. Holland Sitting Room.....	Peter de Hooch
or Pilgrim Exiles.....	Broughton
9. Boyhood of Lincoln.....	Johnson
or Challenge.....	Landseer

Book Reports Suggested

1. Geographical Reader, Europe.....	Carpenter
2. Tales from Shakespeare.....	Lamb
3. American Hero Stories.....	Tappan
4. Geographical Reader, Asia.....	Carpenter
5. Geographical Reader, Australia.....	Carpenter
6. Hoosier School Boy.....	Eggleston
7. Lives of the Hunted.....	Seton
8. Geographical Reader, Africa.....	Carpenter
9. Rip Van Winkle.....	Irving
10. Adventures of Ulysses.....	Lamb
11. Courtship of Miles Standish.....	Longfellow
12. Treasure Island.....	Stevenson
13. Little Men	Alcott
15. Discovery of the Old Northwest.....	Baldwin
16. Hans Brinker	Dodge
17. Legend of Sleepy Hollow.....	Irving
18. Captain Courageous	Kipling
19. Story of the Romans.....	Guerber

20. Christmas Carol.....	Dickens
21. Jo's Boy.....	Alcott
22. David Copperfield.....	Dickens
23. Eight Cousins.....	Alcott
24. Cricket on the Hearth.....	Dickens
25. Hoosier Schoolmaster.....	Eggleston

Suggested Poems to Memorize and Study

Albert, King of Belgium.....	Address to the Army (R. L. S.)
Coolridge, Susan.....	New Every Morning (R. L. S.)
Bates, K. L.....	America the Beautiful (American Anthology)
Dobson, Austin.....	Rose and the Gardener (Open Sesame, V. 2)
Emerson, R. W.....	Each and All (Poems)
Letts, W. M.....	Spires of Oxford (War Verses)
Page, Wm. T.....	American Creed (R. L. S.)
Shakespeare, William.....	Hark, Hark the Lark (Golden Poems)
Van Dyke, Henry.....	Name of France (Treasury of War Poetry)
Whittier, J. G.....	Trailing Arbutus (Poems)
Perry, Nora.....	Coming of Spring (Posy Ring)
Riley, J. W.....	Name of Old Glory (Golden Numbers)
Tennyson, Alfred.....	Sir Galahad (Open Sesame, V. 2)
Van Dyke, Henry.....	Footpath to Peace

NINTH GRADE

First Semester

Grammar: Three lessons per week. Text book in the hands of the pupils. Emphasize the following:

The Sentence: Subject, predicate, complements, modifiers, phrases, clauses, independent elements. Classification and analysis of ordinary sentences drawn principally from pupil's speech, compositions, or from the text.

Recognition of parts of speech and the application when necessary of the rules of syntax to errors in speech or in papers.

Drills for the common errors of such verbs as see, do, come, ring, go and others. Also for the common errors with pronouns, adjectives, and adverbs.

Oral Expression: One lesson per week.

Exercises in breathing, in securing poise, relaxation of the muscles, enunciation of the vowels, articulation of the consonants

and in the pronunciation of the words commonly mispronounced. After considerable drill on the mechanics of speech, the work should be varied by reading aloud from texts, by declamations, by quoting memory gems with clearness and effect, by telling stories, and by speaking before the class or before other gatherings.

Word Study. Frequent lessons in spelling, practice in pronunciation according to diacritical markings, instruction in the use of the dictionary and in vocabulary building.

Composition: One paper per week. One period per week, given to the discussion of themes. Papers read by the instructor.

A. Uniform paper to be used by all English classes through the year—uniform headings, indentations and margins.

B. Rules for the use of capitals, question marks, period, comma, apostrophe and hyphen.

C. Unity, sequence and proportion of the composition simply presented to fit the needs of the required themes, also the unity of the sentence and the variety of arrangements in sentence elements.

D. Much practice in letter writing—both business and social forms.

E. After each paper has been marked pupils will correct same in class. Then rewrite and file both copies in a booklet for this purpose.

Subjects for Themes. The instructor will study the individual traits and interests of the pupil, giving him considerable latitude in the selection of his subjects. He should watch, too, the interests of the community and have pupils express in writing their ideas of same. Subjects of a controversial nature usually cause more interest than others and the able teacher can handle such impartially. The following may be suggestive:

A. Topics from within the school room. Descriptions of characters and places from the stories read; interesting information learned from the other classes; description of experiments; comparison of English with a foreign language. Opinions in regard to school activities.

B. Topics outside the school. Reports on lectures; sermons; societies; newspaper and magazine articles; picture shows; community gatherings; fishing, hunting, hiking. If a pupil has a hobby as the radio, photography or a special liking for Buicks, Leghorns, Duroc-Jersies, Republicans or Methodists, give him a

chance to explain to the class. Themes dealing with the various occupations, from which the pupil can get first hand information as to how to enter, work done by those engaged, advantages and disadvantages.

Real News. Have each pupil trained to give the class the news from his own vicinity with emphasis and details.

Second Semester

Literature 3/5.

Grammar 1/5.

Composition 1/5.

Grammar: Use the grammar to solve the problems that arise in oral and written work. Careful attention to the following: Question of agreement, inflections, functions, tense, use of shall and will, use of the subjunctives, infinitives, participles and gerunds. Constantly apply all the rules to the pupils' errors in speech and writing. Create a morale for high class English.

Composition: Continue as outlined for the first semester with the main emphasis on interest in the material, with increasing attention to form. Encourage originality, fluency, spontaneity and insist upon accuracy in every detail. Much criticism and revision in class. After each paper has been marked, pupils will re-write, if not up to a high standard the first time, and file in the booklet.

Literature

Group 1.

Choose at least one from each group for class study.

Short stories. (A good collection).

Hawthorne's "Twice Told Tales."

Irving's Sketch Book.

Selections from the Alhambra.

Poe's Prose Tales.

Robin Hood.

Group 2.

Epics.

The Odyssey.

The Illiad.

Old Testament Narratives.

(Ruth, Job, Daniel, Esther).

Group 3.

Novels.

Treasure Island.

Ivanhoe.

Group 4.

Plays.

As You Like It.

Midsummer Night's Dream.

The Merchant of Venice.

The Blue Bird.

Memorize at least a hundred and fifty lines of verse or prose per semester.

Home Reading:

A pupil must earn at least 36 points during the year.

A tentative valuation in points has been given for each book.

Freshman Reading List

Author	Book
Alcott, Louisa M.....	Little Women, 4; Little Men, 4; Old Fashion Girl, 4; Eight Cousins, 4.
Aldrich	The Story of a Bad Boy, 4.
Andrews, M. R. S.....	The Perfect Tribute, 2; The Counsel Assigned, 2.
Barrie, J. M.....	Peter and Wendy, 6; The Little White Bird, 6; The Little Minister, 6.
Clemens, S. L.....	The Prince and the Pauper, 4; Huckleberry Finn, 4; Tom Sawyer, 4; Puddinghead Wilson, 4; A Dog's Tale, 2; Roughing It, 6.
Craik, Dinah Mulock.....	The Little Lame Prince, 3.
Defoe, Daniel	Robinson Crusoe, 6.
Fisher, Dorothy Canfield	Understood Betsey, 6.
Hale, E. E.....	The Man Without a Country, 2.
Johnson, Owen	The Varment, 4.
Kipling, Rudyard	The Jungle Book, 3; Just So Stories, 3; Soldiers Three, 6; Captain Courageous, 6; Puck of Pook's Hill, 6.
Keller, Helen	The Story of My Life, 6.
Burnett, Frances Hodgson	The Secret Garden, 6; Little Lord Fauntleroy, 4.

Author	Book
Burroughs, John	Birds and Bees, 6; Wake Robin, 6.
Church	Stories from Virgil, 6; The Illiad for Boys and Girls, 6; The Odyssey for Boys and Girls, 6; Stories from the Greek, 6.
Little, Frances	The Lady of the Decoration, 4.
London, Jack	White Fang, 4; The Call of the Wild, 4.
Dickens, Charles	Oliver Twist, 6; Pickwick Papers, 6; The Christmas Carol, 2; David Copperfield, 6; The Cricket on the Hearth, 6.
Dumas	The Three Musketeers, 6; The Count of Monte Cristo, 12.
Davis, R. H.	The Bar Sinister, 2.
Cooper, J. F.	The Spy, 6; The Pathfinder, 6; The Last of the Mohicans, 6.
Freeman, Mary Wilkins..	A New England Nun, 4.
Irving	The Alhambra, 6.
Henry, O.	The Ransom of Red Chief, 4; The Four Million, 4.
Jewell, Sarah Orne.....	The White Heron, 3.
Montague, Margaret	Closed Doors, 3.
Ouida	A Dog of Flanders, 4; The Nurnburg Stove, 4.
Spyri	Heidi, 3.
Stevenson, R. L.	Kidnapped, 6.
Seton, Ernest Thompson	The Trail of the Sandhill Stag, 4; The Biography of a Grizzly, 4; Wild Animals at Home, 4.
Montgomery, Lucy	Anne of Green Gables, 4.
Mills, Enos A.	The Spell of the Rockies, 4; In Beaver World, 4; Wild Life in the Rockies, 4; Grizzly, 4.
Swift, Dean	Gulliver's Travels, 6.
Verne, Jules	Around the World in Eighty Days, 6; Twenty Thousand Leagues Under the Sea, 6; A Trip to the Moon, 6.
White, William Allen.....	The Court of Boyville, 6; A Boy's Town, 6.
Grenfell	Adrift on an Ice Pan, 4.
Hagedorn	Boys' Life of Roosevelt, 6.
Parton	Captains of Industry, 6.
Tappan, Eva	When Knights Were Bold, 6; Old World Hero Tales, 6.

Author	Book
Pyle	Robin Hood, 3; Champions of the Round Table, 4.
Jacobs	Indian Fairy Tales, 6.
Garland	The Captain of the Gray Horse Troop, 6.
Jackson, Helen Hunt.....	Ramona, 6.
Wallace, Lew	Ben Hur, 6.
Wiggins, Kate Douglass	Rebecca of Sunnybrook Farm, 4; Mother Carey's Chickens, 4.
Waller	The Woodcarver of 'Lympus, 6.
White, Stewart E.....	The Blazen Trail, 6.
Willsie, Honore	Lydia of the Pines, 4.
Lytton, Bulwer	The Last Days of Pompeii, 6.
Roosevelt, Theodore	Theodore Roosevelt's Letters to His Children, 6.
Antin, Mary	The Promised Land, 6.
Wister, O.	The Virginian, 4.
Rihbany	A Far Journey, 6.
Robertson, M.	Sinful Peck, 6.
Stackpoole	Satan, 6.
Phillpots, E.	The Grey Room, 6.
Orezy	The Scarlet Pimpernel, 6.
Cervantes	Don Quixote, 6.
Bunyan	Pilgrim's Progress, 6.
Sabitini	Captain Blood, 6.
Goldsmith	The Vicar of Wakefield, 6.

OUTLINE
OF
ARITHMETIC

ARITHMETIC**Seventh Grade**

1. Specific objectives:
 - a. To stimulate original work.
 - b. "To make arithmetic an efficient means for the pupil's discovering valuable results for himself."
 - c. To teach the pupil how to attack a problem involving considerable reasoning and to reason it through.
 - d. To challenge the interest of the pupil in applying the important topics of the year in solving written problems.
2. Most important topics for the year:
 - a. General review of the four fundamental operations with (1) integers, (2) common fractions, and (3) decimals.
 - b. Practical problems to give variety to review work.
 - c. Denominate numbers: (1) tables, (2) reductions, (3) four fundamental operations, (4) applications.
 - d. Mensuration: (1) circle, (2) rectangular solids, (3) cylinders.
 - e. Percentage reviewed and extended.
3. Minimum requirements to be met by the end of the year:
 - a. Ability to perform the four fundamental operations accurately and rapidly with integers, decimals, and denominate numbers.
 - b. Ability to apply the common formulas for areas and volumes to practical problems such as those dealing with silos, grain bins, water tanks, etc.
 - c. Ability to use denominate numbers intelligently in practical ranch and store problems.
 - d. Ability to apply the three fundamental rules of percentage to problems in commission, trade discount, selling, taxes, and insurance.
 - e. Ability to solve various problems in applications of simple interest, including discounting of notes and drafts.
 - f. Ability to draw up common business forms, such as checks, notes, drafts, bills, statements, and receipts.

- g. Ability to attack systematically and to analyze tersely "three step" and "four step" written problems.
 - h. Ability to write these solutions of written problems in a neat, accurate, and condensed form, *with* the steps of each problems properly *labeled*, and *without* the common errors in inaccuracy of statement.
4. Suggestions to teachers:
- a. Read carefully the suggestions to teachers in the outline for the sixth grade arithmetic and the general suggestions preceding the fourth-grade outline.
 - b. Give definite instruction in how to attack a written problem systematically by the use of definite steps, such as (1) reading the problem carefully, (2) determining exactly what facts are known and what is required, (3) indicating the operations to be used in solving the problem, (4) deciding how best to carry out these operations, and (5) deciding how the results should be checked.
 - c. Emphasize the importance of approximating results roughly before actually solving a problem and of checking results afterward.
 - d. Guard against the common inaccuracies mentioned in the "suggestions to teachers" in the outline for fifth and sixth grades.
 - e. Assign many practical problems, especially in mensuration, dealing with such familiar objects as silos, grain bins, water tanks, etc.
 - f. Encourage originality, self-activity, and resourcefulness at all times, and strive daily to foster and develop these qualities in the lives of the pupils.
5. Outline of Seventh Grade Arithmetic:
- a. First period of six weeks.
 - 1. General review of integers: (a) reading and writing integers and Roman numbers to billions and thousands respectively; (b) drill for speed and accuracy in the four fundamental operations with integers and fractions.
 - b. Second period.
 - 1. Linear measure and square measure: (a) tables; (b) reductions; (c) applications to problems.

c. Third period.

1. Weight measure, time measure, angle measure, and arc measure with applications of each.
2. Addition, subtraction, multiplication, and division of denominate numbers.
3. Latitude, longitude, and standard time (very briefly).

d. Fourth period.

1. Circumferences and areas of circles and surfaces and volumes of right prisms and cylinders. Applications to silos, tanks, etc.
2. Review of the elements of percentage.

e. Fifth period.

1. The three rules in percentage. Do not emphasize the rule for finding the base.
2. Applications of the three rules to commission, trade discount, selling, emphasizing the *usual* problems.

f. Sixth period.

1. Billing goods at a discount.
2. Taxes and insurance (these topics are especially desirable for pupils who may not attend eighth grade).
3. Simple interest: (a) for fractional parts of a year; (b) for years, months, and days, using *one* good method; (c) interest on notes, checks, and drafts.
4. Review of the year's work, or at least of topics on which pupils need the most review.

6. Book for teachers of seventh grade arithmetic:

- a. For books on teaching arithmetic and bibliography of practice exercises and test material, see bibliography just preceding the outline for fourth grade arithmetic.

Eighth Grade

1. Specific objectives:

- a. To stimulate more independence and original work.
- b. To round out the pupil's knowledge of arithmetic and his power to use it.
- c. To give the pupil confidence and power in doing a much larger proportion of his work mentally.

- d. To give the pupil joy and skill in attacking and solving practical problems of everyday life.
2. Most important topics for this grade:
 - a. Mensuration reviewed and completed.
 - b. Square root and its application to Theorem of Pythagoras.
 - c. Applications of percentage reviewed and extended.
 - d. Brief introduction to elementary algebra and its use in the formulas of mensuration, interest, etc.
 3. Minimum requirements to be met by the end of the year:
 - a. Ability to solve a large variety of practical problems in mensuration dealing with common areas and volumes.
 - b. Ability to draw *to scale* neatly and accurately the common plane figures involved in mensuration.
 - c. Ability to use equations in one unknown with considerable facility in applying the formulas of mensuration, the formulas of percentage, and the formulas applying square root to right triangles.
 - d. Ability to solve "three-step" and "four-step" written problems in neat, accurate, and condensed form, with the steps of each problem properly labeled.
 - e. Ability to apply percentage readily and accurately to the applications studied in the sixth and seventh grades as well as to problems dealing with ranch products, savings accounts, borrowing money, investments (including build-and loan), and income taxes.
 4. Suggestions to teachers:
 - a. See the general suggestions preceding the outline for fourth grade arithmetic and also directions to teachers given in the outlines for fourth, fifth, sixth, and seventh grades.
 - b. Place emphasis upon accuracy and neatness in drawings in mensuration, approximating results before solving a problem and checking results afterward, and the practical applications of arithmetic that occur often in life.
 - c. If possible, make some correlation of arithmetic with other school subjects such as geography, mechanical drawing, and agriculture.

5. Outline of Eighth Grade Arithmetic:

a. First period of six weeks.

1. Introduction to elementary algebra (about three weeks): (a) stating formulas as rules; (b) evaluating formulas such as A equals r^2 , A equals ba , etc.; (c) stating rules as formulas; (d) applications to review of areas of triangles, rectangles, and circles. See Overman's *Arithmetic for Teachers* (chapter on algebra) and Stamper's *The Teaching of Arithmetic*, pp. 182-187 and pp. 222-223 for suggestions on the introduction to algebra.
2. Areas of trapezoids, using formula instead of rule and some practice in finding areas of polygons of five or more sides by dividing them into rectangles, triangles, and trapezoids.
3. Areas of parallelograms, and surfaces and volumes of rectangular and triangular (right) prisms, using formulas; and applications. Teach surfaces and volumes of right circular cylinders along with prisms.

b. Second period.

1. Surfaces and volumes of cones and pyramids taught together, but treated briefly. Omit surface and volume of sphere.
2. The axioms (multiplying equals by equals, etc.) used in solving simple equations such as $\frac{1}{3}X$ equals 9, X plus 5 equals 7, $X-5$ equals 3, and $3X$ equals 9, by considering the equation as a *balance of values* and comparing it with a simple balance or pair of scales. See Overman's *Arithmetic for Teachers*, pp. 254-257.
3. Use of axioms in the three problems of percentage (p equals br , r equals p/b , and b equals p/r). Do not emphasize the third case.
4. Applications to problems in farm products, discounts, savings accounts, borrowing money, investments, and a very little on stocks and bonds (use formulas for rules).

c. Third period.

1. Interest: (a) Review, using one method; (b) by use of

tables, including one lesson compound interest by use of tables.

2. Review of applications of percentage; miscellaneous problems in percentage where pupil must decide on (a) what kind of application is involved and (b) which of the three rules of percentage to use. See "Minimum requirements" stated above.

d. Fourth period.

1. Square root (a) by inspection; (b) by factoring; (c) by use of a diagram (first develop carefully the rule for pointing off in periods of two digits each) when the square root is exact and then when there is a remainder. See Brown and Coffman's *How to Teach Arithmetic*, pp. 291-297. If there is time, cube root *by factoring only* may be taken up very briefly.
2. Applications of square root, using formulas and taking the square root of both members of the equation.
3. The Pythagorean theorem (a) objectively presented, (b) rules for finding hypotenuse, base, and perpendicular stated as formulas; (c) applications using formulas; (d) applications in finding slant heights of pyramids and cones, etc.

e. Fifth period.

1. Proportion: (a) presented as equality of two fractions; (b) finding one term by use of algebra; (c) finding a term by use of "product of means equals product of extremes".
2. Proportion applied to similar triangles using X or other letter as the unknown distance.
3. Miscellaneous applications of simple proportion (omit compound proportion) briefly treated *if there is time*.
4. Review of simple interest; drill on one method; using formula $p = I \times r \times t$, etc.

f. Sixth period.

1. Brief introduction to the metric system using mostly centimeters, meters, liters, grams, and kilograms and their equivalents in inches, yards, quarts, etc. The purpose here is to prepare for the use of the metric system in high school science.

2. General review adopted to the needs of the class. Note: Proportion may be omitted if the time is needed for important topics in the fifth period.
5. Books for teachers:
 - a. For list of books on the teaching of arithmetic and practice and test material see bibliography just preceding the outline for Fourth Grade Arithmetic.
 - b. References for the introduction to algebra in the eighth grade:
 1. Stamper—A Text Book on the Teaching of Arithmetic (American Book Co.).
 2. Overman's Arithmetic for Teachers (Lyons and Carnahan, Chicago).

Ninth Grade Algebra

I. Introduction.

In the preparation of this syllabus, three definite requirements have been followed as closely as the principles of sequence and selection seemed to warrant: (a) the recommendations of the National Committee on Mathematical Requirements as set forth in their recent report, "The Reorganization of Mathematics in Secondary Education"; (b) the requirements of the College Entrance Examination Board; (c) the demands made upon the teaching of algebra by modern principles of psychology.

Teachers are reminded that students who expect to pursue college mathematics or physics should take in high school one and one-half units of algebra and at least one unit of geometry, and students who expect to do engineering work in college should take in addition to the above two and one-half units, one unit of physics and one-half unit of Solid Geometry, being careful to qualify also on the modern foreign language requirements, which varies somewhat, but is usually three units.

II. General suggestions to teachers.

1. The course should make a warm and human *appeal* to the pupil. Whenever possible, each new topic should be introduced by a concrete problem. An experimental or laboratory approach both stimulates interest and shows the need for a new topic.

2. The course should at every stage *challenge* the interest and self activity of the pupil. Let him state what *he* would do in attacking new problems.

3. Resourcefulness and independence should further be stimulated by letting the pupil himself discover many new principles. Most text books in algebra in the past have ignored the great psychological value of the joy of achievement.

4. Make provision for individual differences both by a skillful development and careful grading of the subject for the benefit of the slow pupils and by the assignment of well-selected more-difficult problems for the brighter pupils only.

5. Introduce the graph early and use it often for the purposes outlined 3 of "important topics" below. A graphical picture usually makes a stronger appeal than does a purely algebraic solution. The use of graphs in other subjects is one of the most important applications of algebra.

6. Give systematic instruction in the solution of the different types of written problems.

7. Frequent use of standardized tests both for review and testing purposes should be made. See bibliography below for lists of tests. See also Thorndike's *Psychology of Algebra*, Chapter VI on the "Measurement of Algebraic Abilities" and Chapter XIII in the report of the National Committee, *op. cit.*, for a rather full discussion of several tests in algebra.

8. Don't forget that the formula, taught with the purposes outlined below, is a very important topic, especially because of its uses in the sciences and engineering.

9. Be familiar with the plan and organization of your text book, the reasons for the order and choice of exercises, and the objectives of the course.

10. Give much drill and practice upon the technique of algebra, especially give practice frequently in pupils' writing *answers only* to short problems and in solving oral problems.

11. Systematic review should be made at the end of each six weeks period and especially at the end of each semester.

12. The equation as the central topic of algebra should be introduced early in the course to provide motivation, and many topics should be treated as means to the end of solving equations.

III. Most important topics in first-year high school algebra.

1. Solution of problems by use of (a) linear equations in one variable and later (b) by use of two simultaneous linear equations

in two variables. Note.—The college entrance examinations also pre-suppose ability to solve these equations with *literal* co-efficients.

2. Formulas, introduced early and used often in the course, as (a) a means of helping make the transition from arithmetic to algebra; (b) as a short rule for computation; (c) as representing a general solution of a problem; and, finally, (d) as a way to represent how one quantity depends upon another.

3. Meaning and use of negative numbers.

4. The essentials of algebraic technique, including:

- a. The four fundamental operations (no complicated or elaborate examples), including only those types essential in subsequent work of the course.
- b. Factoring the following three types: (1) Monomial factors; (2) the difference of two squares; (3) perfect square trinomials; (4) trinomials of the type x^2+px+q .
- c. Fractions, including the simpler types of complex fractions.
- d. Numerical verification of results secured under a, b, and c above.

5. Ratio (as a common fraction or quotient), proportion as an equality of two ratios (fractions), and variation (using formulas) as representing how one quantity depends upon another.

6. Exponents and radicals, limited to:

- a. Proofs for laws for positive integral exponents;
- b. Reduction of radicals of the types

$$\sqrt{a^2b}, \sqrt{a/b} \text{ and } 1/\sqrt[3]{a}$$

- c. Fractional exponents limited to the treatment of cases occurring under b above;
- d. Finding square roots of arithmetic numbers, but not of polynomials.

7. Introduction to numerical trigonometry, including:

- a. Definition of sine, cosine, and tangent;
- b. Their elementary properties as functions;
- c. Their use in solving right triangles without logarithms;
- d. The use of four place tables of these functions.

8. Intuitive geometry: (a) simple measurements with ruler; (b) numerical computation to a specified degree of accuracy; (c)

use of squared paper in construction work (drawing parallel lines, dividing a line into equal parts, checking areas by counting squares, etc.); (d) simple constructions with ruler and compass; (e) familiarity with certain special right triangles, (f) computation by use of similar triangles; (g) theorem of Pythagoras used to apply square roots to right triangles.

IV. Most important topics in elementary algebra, part II (third semester).

1. Quadratic equations in one variable (numerical and literal co-efficients) including solution by factoring, completing the square, the formula, and the graph.

*2. Binomial theorem for positive integral exponents, with applications.

*3. Arithmetic and géometric progressions.

4. Simultaneous linear equations in three variables.

5. Simultaneous linear equations and quadratic equations; also simultaneous quadratics.

*6. Exponents and radicals: (a) theory and use of fractional, negative, and zero exponents; (b) rationalization of the denominator of fractions where the denominator is either a monomial or binomial; (c) solution of such equations as

$$x + \sqrt{x-5} = 11.$$

7. Logarithms: (a) fundamental formulas; (b) computation by use of four-place tables; (c) application to trigonometry of the right triangle.

V. Objectives in teaching high school algebra.

1. To review, develop, and extend the most important processes of arithmetic.

2. To develop the ability to understand and use the symbolism (language) of algebra.

3. To develop the ability to analyze problems in algebra, to formulate them, and to interpret the results obtained.

4. To develop those powers of *understanding* and *analyzing* relations of *quantity* which are needed to give a better understanding and appreciation of life.

* Note—Topics marked with an asterisk above are required both by the National Committee and the College Entrance Examination Board.

5. To develop those habits of thinking which make the powers named above effective in the life of the pupil. See the report of the National Committee listed in the bibliography.

VI. Outline of course of study in high school algebra.

1. First semester of first-year algebra.

a. First period of six weeks.

- (1) Literal numbers defined and illustrated.
- (2) Use of literal numbers in formulas; applications to such problems as finding areas of rectangles, triangles and circles, finding volumes of simple solids, and solving problems in simple interest. This work should be correlated with some intuitive geometry, including measurements to a certain specified degree of accuracy consistent with data of a certain degree of accuracy and also the construction with ruler and compass of figures involved in this work.
- (3) Problems in drawing the graph of a simple formula, without introducing the concept of rectangular coordinate in the usual sense.
- (4) Linear equations in one unknown: (a) introduced as expression of a *balance* of values; (b) solved by use of the axioms for equals (adding the same number to both members, etc.); (c) used to find any letter of a simple formula (changing the subject of the formula); (d) numerical applications of (c).
- (5) Solving *easy* written problems involving the solution of linear equations in one unknown.
- (6) Concrete introduction to negative numbers by use of such devices as the thermometer, representing positive and negative numbers by a number scale on a straight line, comparison of assets and debts, etc.
- (7) Addition and subtraction of positive and negative numbers.
- (8) Addition and subtraction of polynomials of three and four terms each. This topic may be presented as analogous to addition of denominate numbers.

- (9) Removing parentheses as a means of solving linear equations involving parentheses. There is no justification for teaching this as an isolated topic.
 - (10) Written problems involving linear equations in one variable where parentheses are involved. Teach a systematic procedure for solving written problems, such as (a) reading the problem carefully to determine exactly what is given and what is required; (b) representing the unknowns in the problem; (c) forming an equation by use of some fact or statement of the problem, either stated or implied; (d) solving the equation and interpretation of results; (e) checking results by showing that all conditions of the given problem are satisfied.
 - (11) Review for the period. The most important definitions, formulas, processes, etc., should be reviewed and summarized.
- b. Second period of first semester of algebra.
- (1) Multiplication of monomials.
 - (2) Multiplication of polynomials by monomials and use of this in solving linear equations involving parentheses where monomials stand in front of the parentheses.
 - (3) Systematic instruction in how to solve written problems of two or more of the following types (using linear equations in one unknown): (a) age problems (usually it is necessary to represent two ages at each of two different times); (b) mixture problems (e. g., a mixture of 90-cent tea and 40-cent tea); (c) coin problems; (d) perimeter problems; (e) consecutive number problems.
 - (4) Equations with fractional arithmetic co-efficients.
 - (5) Division of polynomials by monomials; first teach as a basis for this work the rules for division of monomials by monomials.
 - (6) Division of polynomials by binomials and trinomials.
 - (7) Simple equations, more general treatment: (a) classified as identities and conditional equations; (b) solved by shorter methods (transposing, can-

celling terms, and changing the signs of both members). These new processes should be very carefully explained.

- (8) Distance-time-rate problems. The representing of both distances, both times, and both rates in tabular form is recommended. The method should be systematically developed.
- (9) More formulas, with applications, such as those dealing with Fahrenheit and Centigrade thermometer scales, distance of a falling body, etc., with some review of previous work with formulas.
- (10) Indirect measurements by use of drawings to scale; use of squared paper in construction work and in checking results in areas, etc., by counting the squares.
- (11) Practice for speed in fundamental operations. General review and miscellaneous problems.

c. Third period (to end of first semester).

- (1) Squaring monomials and finding square roots of monomials. Definite rules should be developed.
- (2) Factoring out the common factor in a polynomial. Teach how to find the highest common monomial factor by inspection.
- (3) The product of the sum and difference of two numbers.
- (4) Factoring the difference of two squares, including the cases where a monomial factor is to be removed first and where there are two stages in the factoring because of one of the factors' being the difference of two squares.
- (5) Square of the sum of two numbers. Develop rule and practice for one or two days.
- (6) Square of the difference of two numbers.
- (7) The tests for a perfect square trinomial, with practice in supplying the third term when two terms are given.
- (8) Factoring perfect square trinomials. Emphasize necessity of first testing the trinomial.
- (9) Finding the product of two binomials by use of

sum of two products and the sum of two cross products.

- (10) Factoring trinomials of the type x^2+px+q .
- (11) Solution of equations, which become linear after simplification, where special products of the types named in (3), (5), (6), and (9) above are involved. Good for review and motivation of work.
- (12) Written problems applying (11) above. Problems in areas and perimeters are good here.
- (13) Quadratic equations solved by methods of factoring given in (2), (4), (8), and (10) above. Note.—The College Entrance Examination requirements include cases where the co-efficients are literal.
- (14) General review for the semester. See bibliography for list of tests that may be used at this time.

2. Second semester of first-year algebra:

a. First period of six weeks.

- (1) Introduction to algebraic fractions: (a) reasons for studying fractions; (b) meaning of a fraction (as an indicated quotient); (c) meaning of *lowest terms*; (d) reduction of fractions to lowest terms; (e) practice work and testing for speed.
- (2) Addition of fractions: (a) when they have the same denominator; (b) when denominators are monomials and unlike; (c) when denominators (monomials or binomials) are all alike except as to algebraic signs; (d) when L. C. D. can be found by inspection.
- (3) Short methods of adding and subtracting fractions: (a) when each has 1 for the numerator; (b) when numerators are different and denominators are prime to each other (sum of cross products over product of the denominators). (Not more than one day for this).
- (4) Multiplication and division of fractions: (a) when terms of the fractions are monomials; (b) when some of the terms are binomials or trinomials some of which can be factored.
- (5) Complex fractions, where the numerator and denominator contain one or two simple sub-fractions.

- (6) Evaluating formulas involving simple fractions.
 - (7) Solving for each letter of a formula which involves one or more fractions.
 - (8) Solving linear equations in one variable (that is, those that are linear after clearing of fractions and simplifying) when the denominators contain: (a) variable monomial denominators; (b) binomial denominators.
 - (9) Written problems involving equations of the types named in (8) above.
 - (10) Meaning and use of *ratio* as a fraction; meaning and use of *proportion* as an equality of two ratios (fractions); applications to problems (a) involving similar triangles (finding sides); problems in areas. If time permits application may be made to problems in percentage.
 - (11) Review for the period.
- b. Second period of second semester.
- (1) Graphs; bar diagrams; circle diagrams; lines proportional in length to quantities (line graphs); vertical graphs, statistical graphs (formed by joining the end-points of vertical bar graphs). (About one week for this work on graphs).
 - (2) Simple geometric constructions with ruler and compasses (e. g., perpendicular bisector, bisector of an angle, parallel lines, etc.), (one week).
 - (3) Introduction to graphs in rectangular co-ordinates: (a) important definitions; (b) plotting points; (c) drawing graphs of linear equations in x and y .
 - (4) Introduction to graphical solution of two linear equations in two variables. See the Shorling-Clark Modern Algebra—Ninth School Year, pp. 205-212. Teach meanings of *solution* and *satisfy* here. Develop and illustrate the meaning of graphical solution as represented by a point which is the intersection of two lines.
 - (5) Linear equations solved by use of graphs: (a) when the two equations are consistent (one solution); (b) when equations are inconsistent (no finite solutions, graphs being parallel lines); (c) when the

equations are dependent (infinite number of solutions, the graphs coinciding).

- (6) Solving two simultaneous linear equations in two variables by *elimination*: (a) by addition and subtraction; (b) by substitution. The National Committee recommends the expression "set of equations" instead of "simultaneous equations."
 - (7) Written problems solved by the use of two linear equations in two variables. Review the synthetic procedure in solving distance-time-rate problems.
 - (8) Linear equations with literal co-efficients. (Required by College Entrance Examination Board).
 - (9) Problems in variation: (a) use of formula to indicate how one quantity depends upon another; (This leads to definition and meaning of the term, "function," a very important concept); (b) graph of a function (variable) which varies as the square of another variable; (c) applications of direct variation both by algebraic solution and by use of graphs; (d) problems in inverse variation. (Note.—It is suggested that formulas of the type $y = k/x$ be used instead of expressions using the old symbol for variation); (e) problems in joint variation.
 - (10) Graphical representation of functions of the type ax^2+bx+c and graphical solution of quadratic equations when roots (found by intersections of the curve with the X-axis) are (a) rational and distinct; (b) rational and coincident; (c) complex; (d) irrational and real.
 - (11) Review for the period.
- c. Third period (to the end of second semester).
- (1) Laws of exponents for positive integral exponents only. Develop the laws without formal proof.
 - (2) Square roots of arithmetic numbers and algebraic monomials by factoring; square roots of arithmetic numbers (developed by analogy to perfect square trinomials) when the square roots are (a) integers; irrational (e. g., the square root of two); (c) square roots of fractions.
 - (3) Square roots found by the use of tables, if tables

are available; applications of square root to the Theorem of Pythagoras in finding the sides of right triangles.

- (4) Addition and subtraction of surds when the index is 2: when the radicals are (a) integers; (b) common fractions.
- (5) Multiplication of surds when index is 2.
- (6) Solution of pure quadratic equations: (a) graphically; (b) algebraically.
- (7) Brief review of graphical and algebraic solution of quadratic equations.
- (8) Solution of quadratic equations by: (a) completing the square; (b) by the formula. Applications to finding the sides of right triangles when the acute angles are 30° and 60° and also when they are both 45° .
- (9) Introduction to numerical trigonometry: (a) definitions of tangent of an angle; (b) estimating tangents of angles like 10° , 20° , 30° , etc., from figures carefully constructed on cross-ruled paper; (c) use of table of tangents; (d) methods of checking results; (e) problems in heights and distances using the tangent function.
- (10) Introduction to the use of the *sine* and *cosine* functions following steps of (9) above.
- (11) Interpolation in the use of the trigonometric functions.
- (12) Problems in finding the sides of right triangles when interpolation is necessary.
- (13) General review of first-year algebra. See list of "most important topics" under III above. See list of tests in algebra at end of this syllabus.

3. Part II of high school algebra (third semester):

- a. Review of first-year algebra (about three weeks). See III above for list of important topics of first-year algebra. The work in intuitive geometry and numerical trigonometry need not be reviewed.
- b. Remaining three weeks of first period.
 - (1) Quadratic equations in one unknown. Solution by

all four methods given in first-year outline. Give some work with quadratics with literal co-efficients.

- (2) Written problems involving quadratics.
- (3) More difficult graphical solutions of quadratics.
- (4) Review for the period.

c. Second period of the third semester of algebra.

- (1) Special products and factoring, extending them to include the following new cases: (a) types included in the first year outline with one or both terms of each binomial replaced by a binomial; (b) types of the form $a^n + b^n$, where n is odd, taking up first the case where n is 3; (c) type $a^n - b^n$, where n is even and also where it is odd, treating the case where n is 3 first.
- (3) Brief treatment of three linear equations in three unknowns. (College Entrance Exam.).
- (4) Simultaneous equations in two variables: (a) when one is linear and one quadratic; (b) when both are quadratic and of the type $ax^2 + by^2 = c$, including the special forms $x^2 = (r + y)(r - y)$ and $xy = r^2$; (c) graphical solution when one or both of the equations is one of the types $ax + by = c$, $x^2 + y^2 = a^2$, $xy = a$, and $y^2 = ax$. These last types are in the College Entrance Examination syllabus.
- (5) The binomial theorem for positive integral exponents: (a) how to expand binomials of the type $(ax + by)^n$, where n is not greater than 8; (c) simple applications, such as that to compound interest.
- (6) Review for the period.

d. Third period of third semester of algebra.

- (1) Arithmetic and geometric progressions, limited to formulas for the n th term and the sum of n terms, finding the value of such an infinite geometric series as $1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \dots$ and to simple applications. (About one week).
- (2) Theory and use of fractional, negative, and zero exponents. These should be explained as being defined so as to be consistent with the laws for positive integral exponents.

- (3) The rationalization of the denominators of fractions when the denominator is: (a) a monomial radical expression with index either 2 or 3; (b) denominator is a binomial.
- (4) Solution of equations of the type $x + \sqrt{x} - 5 = 11$.
- (5) A brief treatment of logarithms (2 to 3 weeks), limited to (a) the fundamental formulas (learned by their analogy to the laws of exponents); (b) computation by use of four place tables; (c) applications to the trigonometry of right triangles.
- (6) Review for the semester.

VII. Books and magazines for teachers of algebra:

1. Books of a general pedagogical nature:

- a. Judd, C. H., *The Psychology of High School Subjects*. Ginn and Co., Chicago. (2301 Prairie Ave.).
- b. Thorndike, E. L., *The Psychology of Algebra*. The Macmillan Co., Chicago, Ill. A most profound and helpful book. Recommended for all teachers of algebra.
- c. Schultz, A., *The Teaching of Mathematics in Secondary School*. The Macmillan Co., Chicago.
- d. Report of the National Committee on Mathematical Requirements, "The Reorganization of Mathematics in Secondary Education." Sent prepaid by the Dartmouth Press, Hanover, New Hampshire, upon receipt of 20c to pay for shipping charges. A book of about 600 pages. This report will form the basis for courses in high school algebra and geometry for several years, it is thought.
- e. Young, J. W. A., *The Teaching of Mathematics*. Longmans, Green and Co., Chicago.
- f. Ligda, P., *The Teaching of Elementary Algebra*. Houghton, Mifflin and Co., Chicago, 1924.
- g. Sumner, S. C., *Supervised Study in Mathematics and Science*. The Macmillan Co., Chicago, 1922.

Note.—For a rather complete bibliography of books for teachers of mathematics, see *The Mathematics Teacher*, May, 1922, pp. 303-307.

2. Magazines for teachers of high school mathematics:

- a. *The Mathematics Teacher*, 71 S. Broadway, Yonkers,

- N. Y. The official organ of the National Council of Teachers of Mathematics. \$2.00 per year.
- b. School Science and Mathematics, Mount Morris, Ill. \$2.50 per year. The official organ of the Central Association of Science and Mathematics Teachers.
3. Practice and test material in algebra:
- a. Rugg, H. O., and Clark, J. R., Standardized Tests in First-Year Algebra. The University of Chicago Book Store, 5802 Ellis Ave., Chicago.
Practice Exercises in First-Year Algebra, same authors. Note.—The above tests and others are discussed in the Report of the National Committee, *op. cit.*, and in Thorndike's *The Psychology of Algebra*.
- b. Hotz, H. C., First-Year Algebra Scales, with teacher's manual. Teachers College, Columbia Univ., N. Y., 1918.
- c. Otis, A. S., Manual of Directions for Otis Self-Administering Tests of Mental Ability. World Book Co., Yonkers, N. Y.
- d. The CBA Hurdle Tests in Algebra (excellent diagnostic tests). Rand, McNally and Co., Chicago.
- e. Connelly-Huff-Studebaker, Practice Exercises in Algebra. Complete set for first semester and also for second semester. Also teacher's manual, etc., Scott, Foresman and Co., 623 S. Wabash Ave., Chicago.

OUTLINE

OF

HISTORY

HISTORY

General Plan of Procedure

- I. History should be taught as a movement.
- II. Pupils should be ready to study History in its usual relationship.
- III. Lessons should be assigned in large topics: Definite conclusions should be reached.
- IV. The Time Element must enter into the study of History. Dates of real historical significance should be memorized to serve as guide posts.
- V. The development of the class group and continuity of the subject matter should be co-ordinated.
- VI. Helpful Types of Activities should be used for motivating the work.

History—7B

Problem

I.

“Why the people of Europe in the 15th and 16th centuries were interested in exploration of the new waters and lands.”

“How the efforts to find new trade routes and new trade conditions led to the discovery of new lands and naturally to a desire to hold them.”

“Spain, the pioneer colonizer in America, did not merely explore, but planted colonies, and transplanted Spanish institutions.”—Bolton.

References:

The Colonization of North America 1492-1783.—Bolton and Marshal.—(Macmillan).

Spain's Borderlands.—H. E. Bolton (Yale Univ. Press).

Spain's preparation: The Unification of Spain by Ferdinand and Isabella.

The Prestige of Charles V.

Territory colonized—West Indies, Central America, Mexico, South America. In borderlands of North America.

(Florida, Louisiana, Texas, New Mexico, California).

Spanish Institutions:

1. Political.
2. Economic.
3. Social.

II.

I. Political.

(a) Department of Indian Affairs.

1. Function.
2. Legislative.
3. Judicial.
4. Political.
5. Economic.
6. Ecclesiastical.

(b) Colonial Administration.

1. Governor General.

(One of whom was Diego Columbus, 1509, son of Columbus).

2. Supreme Court.

Officers:

1. President.
2. Four Judges.
3. Treasurer.
4. Deputy Grand-Chancellor.
5. Four other officers.

II. Economic:

House of Trade.

(a) Function.

Direct:

1. Trade.
2. Commerce.
3. Navigation.
4. All related matters of the Indies. (Search for gold). (Horse industries).

(b) Government.

Board of Directors:

1. Treasurer.
2. Auditor.
3. Notary.

(c) Work.

1. A warehouse was maintained for receiving all goods and treasure going to or from the Islands.
2. Assembled and forwarded supplies to the Indies.
3. Organized trading expeditions.
4. Instruct and license pilots.
5. Established a department of Cosmography.
 ("Much of the geographical information is still extant") Bolton.
6. Public Farm was established in 1497 to provide loans of stock and seed to be paid back by colonists within a term of ten years.
7. Free lands were granted. Mulberry and Silkworm culture encouraged.

III. Social.

- (a) Establishing Missions.
- (b) Establishing Schools and Universities.

By What?

Why did Spain fail politically in America?

IV. What evidence of Spanish Influence remain in Colorado?

1. Place names.
2. Language.
3. Architecture.
4. Rodeos.
5. "Cowboy (inherited his trade, his vocabulary, and his methods).

References:

Bolton and Marshall: The Colonization of North America 1492-1783—Macmillan.

Bolton: The Spanish Borderlands. (Yale Univ. Press).

Chapman, Chas. E.: A History of Spain. Chap. XXXIII.

Setting of Modern World. D. C. Heath & Co.

The Towns:

1513—"There were seventeen chartered towns in Espanola." Santo Domingo was the chief town and seat of Spanish rule in America with a population of 1500 persons.

I. Government.

1507—Delegates were sent to Spain to petition for rights enjoyed by Spanish towns.

Conventions were often held, to consider common needs and to draw up memorials to the home government.

1530—Colonies lost the Right of Assembly without consent of Charles V.

In the 16th century the towns sometimes elected proctors to represent residents of Spain for this purpose.

In 1523—Some of the Offices in the Colonial towns were elective.

There were departments embracing legislation, police matters, care of highways, sanitation.—Bolton.

I. Periods of Colony Planting:

Time—17th century.

Territory occupied.

From Kunia to Hudson Bay.

The periods reflect great national movements, commercial, religious, political:

- a. The period of the early Stuarts 1603-1640.
Commercial ambitions (Virginia).
Religious and political struggle 1629-1640.
The Great Migration—numerous colonies founded.
- b. The Revolutionary period 1641-1660. Little expansion.
Jamaica conquered.
- c. The Period of the later Stuarts 1660-1668.
Rapid Expansion (Dutch Barriers removed).
New proprietary Colonies formed.

Results:

1. More than 20 colonies by 1689.
2. 200,000 settlers.
3. Tide water region occupied.

II. Methods of Managing Colonies:

- a. Chartered companies (some with governing bodies in England, some in America).
- b. Proprietors.
 1. Gorges.
 2. Calvert.
 3. Carlisle, the Carolina proprietors. Penn.
- c. Private Associations.
 1. The Plymouth Colony.

2. Rhode Island.
3. Connecticut.
- d. The Royal Colonies.

By the end of the 17th century most of the charter and proprietary rights were replaced by direct royal control. Governor and higher officials appointed.

"Popular Assemblies and the will of all."—Herbert E. Bolton.

Guide Topics:

The Colonization of America.

The Beginnings of Democratic Government.

Review:

First stages of the struggle for English liberty.

Topic references: Harding's "The Story of Europe," chapters XXII-XXIV, inclusive, and "The Story of England," chapters XI and XIV; and Bourne and Benton's "Introductory History," chapter XI.

- a. Charters of William the Conqueror; of Henry I; and of Richard I.
- b. King John and Magna Charta (1215).
- c. The First Representative Parliament (1265).
- d. The Development of Parliamentary Government. Model Parliament (1295).

First Problem:

What rights and privileges did the colonists originally bring from England?

Sub-topics.

Language.

Ideas and customs.

Governmental institutions, such as,

Trial by jury.

Forms of village, town, and county government.

Second Problem:

How had these rights and privileges been acquired?

Sub-topics.

William the Conqueror's Charter.

The Charter of Henry I.

Magna Charta 1215.

The First Representative Parliament (1266), and Model Parliament (1295).

The Petition of Rights (1628).

The Habeas Corpus Act (1679).

The Bill of Rights (1689).

II. The Founding of the English Colonies in America :

First Problem:

1. Why Englishmen left home.

- (a) Too many people in England.
- (b) Religious troubles.
- (c) Love of Adventure.
- (d) Political troubles.

2. Advantages offered in America.

- 1. Religious Freedom.
- 2. Political Freedom.
- 3. Land.
- 4. Lumber (home).
- 5. Food.
- 6. Desirable Climatic environment.

I. A detailed study of the settlement of the following five colonies, as types.

Virginia.

Massachusetts (including Plymouth).

Maryland.

New York.

Pennsylvania.

II. A brief study of the settlement of the other remaining eight original colonies.

III. Local and provincial government in the colonies.

IV. First steps towards self-government in the colonies.

- 1. The first colonial Assembly in Virginia. (1619).
- 2. The Mayflower Compact. (1620).
- 3. The New England Confederation. (1643).
- 4. The Albany Convention. (1754).

V. The Intercolonial Wars.

I. Compare and contrast the English and Spanish colonies. The English and French colonists.

- (a) In causes for colonization.

- (b) In geographical environment.
- (c) In native characteristics.

II. Causes of the War.

- (a) England and Spain. (Armada).
- (b) England and Holland. (New Netherlands).
- (c) England and France. (Louis XIV).
- (d) Governmental changes in England. (George III).

References.

The Colonization of North America.
Bolton and Marshall, pp. 359-383.

Topic References:

Harding's "The Story of England," pp. 197-200, 236-39, 260-65, 268-69, 274-86.

III. Effect of these Wars on the future of the colonists in America.

- (a) Elimination of France from America.
- (b) "England and Spain were now the World's great colonizing powers."
 - 1. Democratic government established in America.
 - 2. English language.
 - 3. Protestant religion.

VI. Life in the Colonies.

References:

The Colonization of North America (1492-1783).—Bolton and Marshall, pp. 337-342.

Beard & Bagley, pp. 96-98.

Spark's Expansion of the American People. Chapters IV and V.

French Colonies.

References:

Parkman, Pioners of France, Frontenac, and Old Regime.
Winsor, Cartier to Frontenac.

Parkman, The Jesuits in America.

Literary References:

K. Munroe, Flamingo Feather.

Catherwood, Landy of Fort St. John.
Story of Tonty.

Seventh—A Grade

Note: A brief summary of the History of our Country as far as studied will help to establish right relations between it and the new topic (in large units) as:

1. Period of the Aborigines (to 1492).
2. Period of the growth of local Institutions (1492-1749).
 - a. Discovery and exploration (1492-1607).
 - b. Settlement and the Colonies (1607-1749).
3. Period of the Growth of the Idea of Union (1749-1789).
4. Revolution and Confederation (1774-1789).
 - a. The Revolutionary War.

Note: The teacher should not emphasize the military history of the war.

Develop big movements and show the progress made through them towards independence.

Guide Topic:

The Thirteen Colonies Fighting for Independence.

Problem A:

Why did the Colonists quarrel with the Mother Country?
(Develop the English view point).

Problem B:

Compare and Contrast.

1. What England Did:

- a. The Sugar Act (1773).
- b. Writs of Assistance.
- c. The Parson's Act.
- d. The Stamp Act.
- e. The Townsend Act.
- f. The Posting of Soldiers in Boston.
- g. The Tea Act.
- h. The Five Intolerable Acts.

2. What the Colonies did in retaliation.

- a. Committees of Correspondence.
- b. Boston Tea Party.
- c. First Continental Congress.
- d. Resistance of the part of the Colonists leading to rebellions.

Problem C:

What were the Activities of the following men?

1. Samuel Adams.
2. James Otis.
3. Patrick Henry.

General Gage wrote—

“And as for their Kind—John Hancock, and Adams
if they're taken,
Their heads for signs will hang up high upon the
hill called Beacon.”

Interpret these words of General Gage.

4. Benjamin Franklin.

See Ford: “The Many-sided Franklin.”

Paginated: References for problems A., B., C.

1. Beard and Bagley: History of the American People, chap. 7.
2. Beard and Bagley: Causes of the American Revolution, p. 119.
3. Hart: Camps and Firesides of the Revolution, pp. 162-166.
4. Hart: Source Book, p. 137.
5. Sparks: The Men who made the Nation, pp. 56-60-64-69.
6. Sparks: The men who made Chap. I and II. Adams and Franklin.
7. Southworths: Builder of Our Country, pp. 208, 225 (Franklin) Book II, pp. 1-23 (Henry and Adams).
8. Brooks: Story of the Old Bay State, pp. 109-126. (Otis and Adams).
9. Dudley: Benjamin Franklin.
10. Gordy: History of the U. S., pp. 120-142.
11. Bourne and Benton: History of the U. S.—Chap. XV. Why the English Colonists Became Revolutionists? p. 164.
12. Hart: School History of the U. S. Chap. VIII.
13. Channing: Students History of U. S. Chap. IV.

References to Periodicals:

1. Nation, Vol. 100, p. 442, Patrick Henry's Portrait described.
2. Century, Vol. 92, p. 931, Lafayette, Franklin, Clay and others.

3. Outlook, Vol. 114, p. 115, Lafayette (poem).
Vol. 114, p. 240
Vol. 114, p. 117
Vol. 117, pp. 85-86
4. American Historical Association, Vol. 21, p. 33.
"The French Objective in the American Revolution."
5. World's Work, Vol. 34, p. 659, Oct., 1917, "Our Debt of Gratitude to France."
6. World's Work, Vol. 35, pp. 48-65, "American Adventures Toward Liberty." (Pictures of Pitt, George III, Benjamin Franklin, and others).

Problem D:

Compare the problems and advantages of the two sides.

1. What was the British Plan of Campaign?
2. What was the American Plan of Campaign?
 - a. Make a geographical study of the plan.
 - b. Emphasize:
Population.
Military and Naval forces.
Transportation problems.
Industries.

What was the Work of the Second Continental Congress?

Emphasize the Declaration of Independence.

Study the list of signers for familiar names.

References:

1. Bourne and Benton: p. 190-191. (Signatures, picture of room).
2. Beard and Bagley: p. 142. Picture, p. 143.
3. Hart: School History of U. S., p. 148. List of Pictures.
4. Conditions in the American Army: Life of the Private.

What were the results and the why of the following:

1. First and Second Campaigns of the Hudson Valley.
2. Against Philadelphia.
3. For the Conquest of the South.
4. Valley Forge.
5. Fighting in the West.

Why is Saratoga classified as one of the sixteen important battles of History?

What was the Importance of the French Alliance.

Why was John Paul Jones selected for the Hall of Fame?

What were the Industrial Conditions during the War?

How was the War financed?

1. Loans.
2. Paper Money.
3. Robert Morris.

References:

- Gordy: History of United States, pp. 142-183.
Beard and Bagley: History of American People, pp. 136-156.
Channing: Students' History of U. S., pp. 191-225.
Bourne and Benton: History of U. S., pp. 178.
Hart: School History of U. S., pp. 131.
Scudder: Life of Washington.
Hart: Camps and Firesides of the Revolution.
Gueber: Life of Washington.

Results of the War:

Treaty of Paris. A short study of the American Envoys and their problem.

Terms of peace.

Effects of the War.

1. Upon the United States.
2. Upon the World at large.

References:

- Hart, p. 141.
Bourne and Benton, pp. 220-223.
Channing: Students' History, pp. 225-228.
Beard and Bagley, pp. 156-163.
Gordy, pp. 183.

Suggestions for Motivation:

Dramatize.

1. A political discussion in a Tory home.
2. A political discussion in a Whig home.
3. The search for smuggled goods. (Emphasizing Writs of Assistance).
4. The first Continental Congress.
5. Delivery of the news of the occupation of Boston at Washington's home.

Pantomime.

1. The Boston Tea Party.
2. The Capture of Nathan Hale.

“Make good Selections in Pupils for the characters of—Patrick.”

The London friends, have them write letters justifying their positions and acts.

“In biographical study emphasize the historical value of the work done by intensifying on a few big accomplishments.”

Game:

“Have each child select his favorite Revolutionary character, quote a passage from an important speech made by him, allow the pupils to guess the character.”

Debate:

“Resolved, That Yorktown should have been substituted for Saratoga as one of the 16 decisive battles of the World.”

Pictorial Illustrations:

Have the children collect pictures illustrating a unit of thought that is being developed. Allow a pupil, who has had difficulty in organizing his subject matter, to arrange the pictures as a reel of film.

Literary References:

1. Holmes: The Flower of Liberty.
Holmes: Lexington.
2. Jefferson: The Character of Washington.
3. Emerson: Concord Hymn.
4. Patrick Henry: Speech on the Revolution to put Virginia into a state of Defense.
5. Independence Bell.
6. Pierpont: Warren's address at the Battle of Bunker Hill.

Revolutionary Pictures:

(Perry Picture Company)

Washington Crossing the Delaware.	
The Minute Men—Concord.....	1368
Concord Bridge and River.....	1359
Paul Revere's House, Boston.....	1357
Old North Church.....	1363
Battle of Lexington.....	1364
Lexington Monument.	

Monument, Bridge and Minute Men.....	1369
Old Liberty Tree, Boston.....	1373
Bunker Hill Monument.....	1384
Surrender of Burgoyne.....	1387
Surrender of Cornwallis.....	1383
Signing of the Declaration of Independence.	
Independence Hall	1389-B
Independence Bell	1389-C
Chairs and tables used at the Signing of the	
Declaration of Independence, Mount Vernon.....	1409
Washington at Valley Forge.....	1416-F

Problem:

1. "How the new United States accepted the Federal Government and put it into operation."
2. "The ways in which fears and objections were allayed."
3. "How the National House was set in order financially: The work of Hamilton."
4. "How the two political parties arose."
5. "How the European troubles complicated the situation."

References:

For the Teacher:

- Hart: American History Told by Contemporaries, Vol. II.
 Old South Leaflets (Old South Work, Boston).
 Hosmer: Samuel Adams.
 Morse: Benjamin Franklin.
 Elson: History of the United States.
 Ford: The True Washington.
 Madison's Journal.
 Buell: John Paul Jones.
 Fiske: The Critical Period of American History.
 Roosevelt: Winning of the West.
 Turner: Rise of the New West.
 Preston: Documents Illustrative of American History.

For the Pupil:

- Burton: The Story of Lafayette.
 Hart: Camps and Fire Sides of the Revolution.
 Lodge and Roosevelt: Hero Tales of American History.
 Ford: Janice Meredith.
 Thompson: Alice of Old Vincennes.
 Atherton: The Conqueror (Alexander Hamilton).
 Matthews: Poems of American Patriotism.

Problem II:

How the people advanced across the continent:

1. The change towards more democratic policies brought in by Jefferson and his party.
2. How new territory was acquired.
3. How the new possessions were developed.
4. What was done by those already claimed.

References:

Ogg, Opening of the Mississippi, pp. 495-530.
McMasters, United States, II.
Old South Leaflets V. 105, VI 128.
Roosevelt, Winning of the West, IV 258-307.

Problem III:

"How our relations with other countries have really helped to make us strong."

1. Difficulties with France and England during Washington's Administration.
2. Our struggle for Commercial Independence.
3. Our Recognition of the South American Republics: (Monroe Doctrine).
4. Acquisition of territory from other nations.
5. How the Atlantic Ocean became a Highway of Commerce.

References:

T. B. Edington (Monroe Doctrine).
Beard, American Government and Politics.
Paxson, Independence of the South American Republics.

Problem IV:

How the U. S. changed Industrially.

"Steam and Iron did more to destroy the world that Washington and Jefferson knew than did the opening of the Western land of pioneers."

1. "The need of Protection for the young industries and the factional strife that resulted."

Problem V:

How the people sought greater political privileges and showed an increasing desire for popular education.

1. Wider voting privileges.
2. Rights and privileges for women.

3. Development of schools.
4. Increase of books, newspapers and magazines.

References:

McMasters, United States, VII.
Schurz, Henry Clay.
Bogart: Economic History of America.
Williamson: Introduction to Economics.
Fairechilds: Essentials of Economics.
Webster: General History of Commerce—Ginn & Co.

Eighth Grade—B

1. Civil War Period:
 - A. Review Causes.
 - (1) Slavery introduced into America.
 - (2) Different interpretations placed on the Constitution by the North and South.
 - (3) Missouri Compromise.
 - (4) The Abolition Movement.
 - (5) Fugitive Slave Laws.
 - (6) Compromise of 1850.
 - (7) Kansas-Nebraska Bill.
 - (8) Rise of Lincoln.
2. A. New York:
 - (1) Lincoln's Election.
 - (2) Secession of States.
 - (3) Fort Sumter Surrendered.
 - (4) Preparation for War.
 - (5) Relative Strength of the Two Sections.
3. War:
 - A. Plan of the North.
 - (1) Open Mississippi.
 - (2) Cut the Confederacy in Two.
 - (3) Blockade Southern Ports.
 - (4) Capture Richmond.
 - B. Campaigns on East and West Fronts.
 - C. Prominent Generals.
 - D. Decisive Battles.
 - E. End of War and Conditions of Peace.

F. Results:

- (1) Slavery Abolished.
- (2) State Sovereignty Defeated.
- (3) The Union Upheld.
- (4) Debts.
- (5) Lives Lost and Property Destroyed.

4. Reconstruction Period:

Under three heads—Political, Industrial, and Social.

A. Political.

- (1) Theories of the condition of the Seceded States.
- (2) The President's Ideas and Plan of Reconstructing the States.
- (3) Congressional Ideas and Plans.
- (4) Result.
 - (a) Impeachment of the President.
 - (b) Military Rule in the South.
 - (c) Carpet Baggers.
 - (d) Ku Klux Klan.
 - (e) Reconstruction Measure.
 - I. The Rights Bill.
 - II. The Freedman's Bureau.
 - III. Civil Rights Bill.
 - IV. 13th, 14th, 15th Amendments.
 - V. All States Finally Returned to Union.

B. Industrial.

- (a) The New South.
 - (1) Industrial Revolution in South.
 - (2) Development of Farming.
 - (3) Development of Manufacturing.
- (b) The New West.
 - (1) Public Lands.
 - (2) Settlement.
 - (3) Development of Natural Resources.
 - (4) Development of Transportation.

C. Social.

- (a) The Negro Problem in South.
- (b) Education.

5. America Since the War :

A. Expansion.

- (1) Public Officers Centered.
- (2) Civil Service Reform.
- (3) Ballot Reforms.
- (4) Direct Primaries.
- (5) The Referendum, Initiative, and Recall.
- (6) Commission Form of Government for Cities.
- (7) City Manager Plan.
- (8) Woman's Suffrage.
- (9) Postal Saving Bank.
- (10) Reserve Banks.
- (11) Parcel Post.
- (12) Urbane Movement.

B. Inventions.

- (1) Panama Canal.
- (2) Conservation Projects.

6. Spanish War :

A. Cuban Revolt and Destruction of the Maine.

- (1) War with Spain.
- (2) Results of the War.

B. Hawaiian Question.

7. The World War :

A. European Situation.

B. American Neutrality.

C. Submarine Warfare.

D. War Declared.

- (1) The Draft.
- (2) War Taxes.
- (3) Food Control.
- (4) The Armistice.

8. Current Problems All End :

What dangers confront the American people because of waste in the use of Natural Resources?

A. Prodigality in the Use of Natural Resources.

(1) Coal.

(a) Increase of Coal Production.

(b) Waste in the Coal Industries.

I. Waste in Mining.

II. Waste in Coke and By-Products.

III. Waste in Transportation.

IV. Waste Affects Price of Coal to the Consumer.

B. America's Oil Supply.

(1) Demand for Oil.

(a) Lubrication.

(b) Fuel.

(c) Pipe Lines Independent of Railroads.

(d) Refineries at Strategic Points.

I. Losses.

II. Waste of By-Products.

III. Waste of Natural Gas.

IV. Loss by Fire.

V. Loss by Seepage.

VI. Waste in Using Oil.

C. Forests

(1) Forest Fires. Logging, cutting indiscriminately.

D. Water Power.

(1) Not all waste water utilized for irrigation and water power too highly commercialized—high price.

E. Social.

(1) Rotation of Crops.

(2) Adequate and Suitable Fertilization.

(3) Adaption of Crops to Soil.

(4) Drainage.

F. Topical Discussions on Current Issues.

Bibliography:

Halleck's History of Our Country (for higher grades).

Davidson, Wm. M.—History of United States.

Sparks, E. E.—Expansion of the American People.

THE STORY OF COLORADO

A Synoptical Study

Full of color and light is the story of Colorado. Starred with romance, thrilled with heroism, aflame with hope, are the acts of those who have made its history. Bedewed with the glamor and mystery of old Castile, running back to Puritan England through the descendants of the sturdy New Englanders who have sought and found a home in the shadow of the Rockies; a part of the soil of the Louisiana purchase, carrying with that transaction the magic of Napoleon's might, blazing in the white heat of pioneer devotion and self-sacrifice, Colorado—the red land,—stands for the passion and purpose of the American ideal.

Before the dawn of modern times we see the original Coloradoan dwelling in the cliff palaces devised by his architectural genius and executed with skill and strength. We see an art rich with color, beginning to express itself in form; we see the traces of religious aspiration among these, the first Coloradoans of whom we have any record, known to history as the Cliff Dwellers. Every foot of earth containing remains of this vanished civilization appeals and stimulates and makes the first chapter in the history of this mighty commonwealth—this land of the Columbines—comparable in some measure, at least, to that of early Egypt.

Next, the shadow of the Spaniard falls across the land, bringing with him the religion, education and customs of an old and rich civilization, the influence of which persists to this day, and lends to life in certain portions of Colorado, the atmosphere of foreign lands.

In virile contrast to the grace and beauty that accompanied much of the Spanish settlement of Colorado, we find the pioneers of '58, drawn by the lure of gold, but fired with a sturdy determination to create real homes on the crest of the continent. The age of the prairie schooner in the Rocky Mountain States was an age of heroic proportions. It was a time when men and women stood the daily test with full measure of success. The days were winged with work worth while, and glorified by the faith and tenderness that none more than the pioneer has bestowed upon his fellows. The red man contested every inch of the soil of the "red land" with the white man, and the possibility of American civilization was bought at the price of blood and tears, and halloed by the self-sacrifice of men and women for the ideal of home.

The heroic figure of Lieutenant Pike looms large during this and the preceding period, and the Colorado pioneers from 1858 to 1865 emulated the virtues of those strong souls of the seventeenth century who founded Jamestown and consecrated Plymouth Rock by their arrival.

The next epoch of Colorado life may be termed that of industrial conquest, when mining camps became towns with homes instead of halting places, when agriculture took an ever-increasing place in the rapid development of the mighty commonwealth; when the fruit valleys of the Western Slope became world-famous and the plains of eastern Colorado the Mecca of the homesteaders. Schools flourished, libraries were established. People still spoke of "going back home," but notwithstanding had discovered that home was here on the heights, because here were found opportunities of financial freedom and joy in life.

The spirit of religion has from the earliest days expressed itself in churches in Colorado, and with the years they have grown in beauty and power of influence.

Libraries exist in every corner of the State, and there is an abundance of all that makes for the higher life, the life of thought, vision and purposeful deeds.

"Of old dwelt freedom on the heights," and on the tablelands and mighty mountain slopes of the Centennial State does freedom truly dwell, for side by side with the development of town and country, of church and school and library, is found the splendid fact of the political freedom of women.

From the beginning, this great commonwealth has been a torchbearer, a witness to the struggle of the human spirit to express itself in human institutions. To be a worthy citizen of Colorado, a worthy moulder of its destinies, calls out the highest powers of each individual, and requires a spirit of united endeavor to bring its possibilities to perfection.—M. C. C. B.

Eighth-B—History of Colorado

General Aim:

- A. To familiarize the child with conditions as they were at the period of discovery and exploration in Colorado.
- B. To help him to appreciate the efforts of the pioneers who paved the way to statehood for Colorado.
- C. To familiarize the child with state and local conditions.

D. To establish an understanding and appreciation of the scenic wonders, the resources, and industries of Colorado.

1. History.

A. Period of Spanish Influence.

- (1) Spanish Expedition in Colorado.
(a) Under Coronado. *Don Miguel*
- (2) Connection with International Conflict of Spain, France, and Russia.
- (3) Place, names, and explorations.

B. Period of Fur Traders.

- (1) Early Traders.
 - (a) Forts.
 - (1) Bent's Fort (second largest in the United States).
 - (2) St. Vrain, Lupton, Davy Crocket, Roubidoux.
 - (3) Fort Wise, Later called Fort Lyon.
 - (b) Scouts.
 - (1) Kit Carson.
 - (2) Uncle Dick Wootten.
 - (3) Jim Baker.
 - (4) Jim Bridger.
 - (5) Jim Beckwourth.

C. Colorado Indians:

- (1) Utes, in the Mountains.
- (2) Arapahoes.

Between the Arkansas and Platte.

- (3) Cheyennes.
- (4) Sioux, in Northern Colorado.

D. Period of Gold Rush.

- (1) Old Trails.
 - (a) Santa Fe.
 - (b) Oregon.
 - (c) Old Spanish Trails, Taos to Ft. Laramie.
- (2) Early Discoveries.
- (3) Rush and Stampede.
- (4) Early Strikes in Clear Creek, South Park and Boulder Canyon.

(5) First Towns:

- (a) Auraria or Denver.
- (b) Colorado City.
- (c) Canon City.
- (d) Pueblo.

E. Attempts for Territorial Government.

(1) Peoples' Courts.

1858-1861.

- (2) Miners' Courts.
- (3) Delayed by turmoil in Kansas over question of slavery.
- (4) Provisional Government.
 - (a) Called Territory of Jefferson.
- (5) Became Territory of Colorado.
 - (a) By act of Congress in 1861.
 - (b) Territorial officials.
 - (c) Boundary of Territory.

F. Period of Territorial Government:

- (1) Colorado's part in Civil War.
- (2) Stage-coach Days.
- (3) Pony Express Riders.
- (4) First Railroad.

G. Statehood:

- (1) How and when attained.
- (2) Government.
 - (a) Constitution.
 - (b) Departments of Government.
 - (c) Selection of location of the Capitol.
 - (d) State Officials.
 - (1) First State Officials.
 - (2) Present State Officials.
 - (e) Elections.
 - (f) Congressional Districts.
 - (g) Counties.
 - (h) Revenue.
 - (i) State Institutions.
 - (j) Education.

(3) Geography :

- (a) Location.
- (b) Climate.
- (c) Cities.
- (d) Mountains, rivers, lakes.
- (e) Natural Resources.
 - (1) Land, water, minerals, forests.

(4) Industries :

- (a) Farming—dry land, irrigation.
- (b) Farm areas and extensive products.
- (c) Sugar-beet industry.
- (d) Mining.
- (e) Lumber.
- (f) Livestock.
- (g) Manufacturing.
- (h) Steel Works in Pueblo.

(5) Transportation :

- (a) Railroads.
- (b) Tunnels.
- (c) Automobile Roads.

(6) Literature of Colorado.

(7) Colorado Scenery :

- (a) National Parks.
 - (1) Rocky Mountain.
 - (2) Mesa Verde.
- (b) National Monuments :
 - (1) Yucca House National Monument.
 - (a) Situated west of Mesa Verde National Park.
 - (2) Colorado National Monument.
 - (a) Near Grand Junction.
 - (3) Wheeler National Monument.
 - (a) Near Creede.
- (c) Seventeen National Forests.
 - (1) Lakes.
 - (2) Glaciers.
 - (3) Waterfalls.
 - (4) Mountain peaks.

- (5) Valleys.
- (6) Trees and Highways.
- (7) Wild Animals.
- (8) Birds.
- (9) Wild Flowers.

(8) Other advantages of Colorado :

(a) Health.

- (1) Ideal Climate.
- (2) Altitude.
- (3) Mineral Springs and Health Resorts.
- (4) Scenery—inspiration of Life.
- (5) Outdoor Life.
 - (a) Fishing.
 - (b) Hunting.
 - (c) Touring.
 - (d) Hiking.
 - (e) Camping.

Bibliography :

Chapman, Arthur: Story of Colorado.

Bancroft, Hunbert H.: History of Nevada, Colorado and Wyoming.

Hatch and Parsons: Colorado Civil Government and History.

Parkman, Francis: Oregon Trail.

Parsons, Eugene: The History of Colorado.

Craig, Katherine L.: Brief History of Colorado.

✓ **Ninth Grade—Ancient History**

I. Introduction :

The Rise of Civilization to 800 A. D.

Reading helpful for this introductory period.

Van Loou's—Story of Mankind. Boni and Liveright, New York.

Davis—Readings in Ancient History.

A. The field of history :

- 1. Definition of historical terms.
- 2. Materials for its study—written and unwritten.
- 3. Geographical influences; waterways, mountains, climate products, soil, etc.

4. Value of study—aims—information, culture, toleration, lessons it affords, weighing of evidence.

B. Primitive Man:

1. Our Earliest Ancestors—mentality and civilization and narrow interests.
2. Successive broadening of interests and progress to higher culture: (a) old stone age; (b) new stone age; (c) age of metals.
3. Immense gap between race then and now.

II. The Ancient East:

- I. Background for Greek and Roman history and for the interests that have developed there in modern times.

A. Geographic extent and unity of the ancient East:

1. Water routes and land routes.
2. Fertility of sections as factors in development.
3. The bond of commerce.

B. Ancient Nations of the East:

1. Egypt—"Gift of the Nile."
 - a. Government and religion.
 - (1) Temples and monuments.
 - b. Industrial achievements.
 - c. Classes of people and standards.
 - d. Contacts with other peoples through commerce.

2. Mesopotamian countries:

- a. Tigris and Euphrates Valleys.
 - (1) Tie up with modern interests.
 - (a) English mandate—*oil*.

- b. Early Chaldea:

- (1) Astrology and Science.
 - (2) Laws of Hammurabi.
 - (3) Cuneiform writing.

- c. Assyria:

- (1) Army—conquests and imperial organization.
 - (2) Industry and trade.
 - (3) Libraries and palaces.

- d. Babylonian Empire:
 - (1) Medes—overthrow of Assyria.
 - (2) Nebuchadnezzar—Hanging Gardens.
 - (3) Captivity of Jews.
- e. Phoenicia:
 - (1) Narrow coastland.
 - (2) Tyrian purple.
 - (3) Missionaries of civilization—Trade.
 - (4) Scientific knowledge—Alphabet.
- f. Hebrews:
 - (1) Home; migration under Moses.
 - (2) Mosaic Law.
 - (3) Kings: Saul, David, Solomon.
 - (4) Conquest by Rome.
 - (5) Permanent features:
 - (a) Moral code.
 - (b) Monotheism.
 - (c) The Bible.
 - (d) Relation to Christian Religion.
- g. Lydia:
 - (1) Link between East and West. Croesus.
 - (2) Trade and Coinage—Weights and Measures.
- h. Persia:
 - (1) Ideals and training of Persians.
 - (2) Conquests—Cyrus.
 - (3) Darius and Imperial Organization.

For trade development of these countries use Webster, Wm. Clarence, Chapters I and II.
A General History of Commerce, Ginn and Company, Chicago.

III. Hellas and Hellenes to End of Homeric Age (700 B. C.):

- A. The Greek World:
 - 1. Greece Proper—influence of geography upon the people.
 - 2. Asiatic Greece—meeting of East and West.
- B. Aegean Civilization to 1100 B. C.:
 - 1. Sea Kings of Crete.
 - 2. Excavations of Mycenaean relics.
 - 3. Building—trade—fine arts.

C. Beginnings of real European civilization:

1. Hellenes—Ionians—Dorians—Aeolians.
2. Homeric Age (1100 to 700 B. C.):
 - (a) Homer—Iliad and Odyssey.
 - (b) The trial state: King and council and assembly.
 - (c) Life of people.
 - (1) Manners—occupation—religious ideals.

Readings:

Davis—Readings in Ancient History.
Bulfinch's Mythology.

Gayley's Classic Myths:

Tucker, T. G.—Life in Ancient Athens.
Church, A. J.—The Story of Carthage.

D. The Greek People:

1. The Greek intellect—open to new ideas.
 - a. Active imagination shown in myths.
 - b. Adaptiveness.
2. Bonds of Union.
 - a. Language—literature—race—games—religion.

IV. Preparatory Period (750-480 B. C.):

In this period Greece finds herself. Defeats Persians and develops literary and artistic impulses.

A. Greek colonization:

1. Greek colony:
 - a. Motives and character.
 - (1) Cf. with modern colony.
 - b. Croton and Noncritis as types of colonies.

B. Greek conception of the city state.

C. The Spartans:

1. Legend of Lycurgas.
2. Military basis for education and life.
3. Virtues and faults.

D. Beginning of architecture, art, lyric poetry and philosophy.

E. Rise of Athens to democracy:

1. Abolition of the monarchy.

2. Rule of the aristocracy.
 - a. Draco and Solon.
 - b. Economic and Social Reforms.
3. The Tyrants: Pisistratus.
 - a. Character of and expulsion.
4. Clesthene.
 - a. New Classification of Citizens.
 - b. Political Reforms.
 - c. Ostracism.

F. Struggle for Greek Independence:

1. The First Invasion:
 - a. Darius Invades Europe.
 - b. Ionian Revolt.
 - c. Marathon 490 B. C.
2. The Ten Years Respite:
 - a. Themistocles and Athenian Navy.
3. Second Invasion Under Xerxes:
 - a. Thermopylae, Leonidas and the Three Hundred.
 - (1) Salamis (480 B. C.).
4. Carthage Attacks Sicily.
5. Results of Grecian Success:
 - a. Rise of Athens.

V. **Classical or Golden Age: Athens Pre-eminent (480-431 B. C.):**

- A. Great creative age of Greek World:
 1. Numerous analogies for later students of politics.
- B. Creation of an Athenian Empire:
 1. Confederation of Delos.
- C. Government of Athens under Pericles:
 1. Direct Democracy; Weaknesses.
 - a. Limitations.
 2. Organization and Social Services.
- D. Golden Age of Art and Literature:
 1. Art:
 - a. The Acropolis—Propylaea.
 - (1) Temple-Parthenon.
 - b. Statues and Reliefs—Phidias.
 - c. Sculpture—Praxitiles.

2. The Drama.
 - a. The Greek Theater.
 - b. Aeschylus, Sophocles and Euripides, Aristophanes.
3. History.
 - h. Herodotus and Thucydides.
4. Philosophy-Anaxagoras.
 - a. Socrates, Plato and Aristotle.

VI. Discord in Greece and its Decline (431-362 B. C.):

- A. The Peloponnesian Wars (3 stages) (431-405 B. C.).
- B. Effect on Athens, Sparta, Asiatic Greece and Persia.
- C. Leadership of Sparta (404-371 B. C.):
 1. Persian Influence.
- D. Leadership of Thebes (371-323 B. C.):
 1. Epaminondas.

VII. Age of Alexander:

Rude people from North hand on torch of Greeks to other peoples.

- A. Macedonians; land and people.
- B. Philip of Macedon:
 1. Character—Policy and Military Ideas.
 2. Demosthenes.
- C. Alexander—Education and Ideals:
 1. Conquests: Arbela 331 B. C.
 - a. The Far East.
- D. Attempt to Hellenize the East:
 1. Orientalization of His Const.
 2. Fusion of Races.
 3. Greek Cities and Customs in East.
 4. Break-up of His Empire.
 5. Great Centers of Hellenistic Culture.
 - a. Athens—New Schools of Philosophy.
 - (1) Stoic and Epicurean.
 - b. Alexandria—Museum.
 - c. Rhodes—School of Oratory.
 - d. Antioch—Wealth and Cosmopolitan.

6. Lack of Stability in Alexander's Empire.

Wheeler, B. I.—“Alexander the Great and the Merging of East and West into Universal History.”

VIII. Development of the Early Roman Republic:

Problem—Steps toward a definite political and social organization prior to the period of expansion.

A. Strategic Position of Italy and Rome:

1. Central Position in Great Mediterranean Highway.
2. Physical Features.

B. Legends.

C. Society and Institutions of Early Rome.

D. Unified Political and Social Organization by 286 B. C.:

1. Expulsion of the Kings—Creation of an Aristocratic Republic.
2. Three Charters of Roman Liberty:
 - A. Twelve Tables.
 - B. Licinian Laws.
 - C. Hortensian Laws (286 B. C.).
3. Roman Democracy.
 - A. Organization.

IX. Roman Conquests to 131 B. C.:

A. Factors in Her Success:

1. The Roman Legion.
2. Policy of “Divide and Conquer”.
3. Roman Colonies and Cities.

B. Conquest of Latins.

C. Reduction of South and Central Italy:

1. Samnite Wars.
2. Pyrrhus.
3. Roads and Cities.

D. Carthaginian Wars:

1. Contrast Rome and Carthage.
2. First Punic War (264-241 B. C.).
3. Second Punic War (218-202 B. C.).
 - A. Hannibal and His March.
4. Third Punic War (146 B. C.).

E. Rome in the East and West :

1. Reduction of Macedonia and Greece and Corinth.
2. Rome in Syria—Province of Asia.
3. Conquest of Spain—Rome Supreme in West.

F. Effect of Conquests Upon Rome :

1. Greek Influence on Art and Literature.
A. Platus and Terence—Greek Slave Teachers.
2. Tributes and Slaves.
3. Demoralizing Effects.
4. Economic Effects.
5. Political Effects (provincial system).
Read—Webster, General History of Commerce, Chapters III and IV.

X. Century of strife resulting in a Monarchy resting on a broad foundation of imperial policies :

A. Gracchus and the Agrarian Question :

1. Land Laws.

B. Marius and Sulla (one man power) :

1. Sulla and Wars.
2. Sullan Constitution.

C. Struggle for Leadership :

1. First Triumvirate (60 B. C.).
A. Pompey—Cæsar—Crassus.
2. Cicero as Leader of Opposition.
3. Cæsar as Master of Rome.

D. Augustus Creates the Empire :

1. Government—Concealed Absolutism.

E. Cosmopolitan Character, Rome under Empire :

1. Influence of Imported Ideas and Manners.
2. Increase in Luxury ; Loss of Ideals.
3. Augustan Age of Literature.
A. Virgil—Horace—Livy—Seneca—Martial—Tacitus—Pliny.

F. Imperial Policy Illustrated by Emperors :

1. Augustus and Varus (9 A. D.) Teutoberg Forest.
2. Tiberius, Caligula, Claudius, Nero, Flavius, Emperors.
3. The five good emperors (96-180 A. D.).

XI. Decline and Fall of Rome (180-476 A. D.):

Could Rome under a better Constitution and guidance have lived longer?

A. The Barrack Emperors:

1. Diocletian.
2. Constantine.
 - A. Christianity.
 - B. Council of Nicea (325 A. D.)

B. Forces Causing Disintegration:

1. Decay of Patriotism.
2. Evils of Slavery.
3. Disappearance of the Middle Class.
4. Expensive Government—Taxation.
5. Infiltration of Barbarians.

C. The Barbarians:

1. Why did they enter the Empire?
 - a. Adrianople.
2. Alaric and the West Goths.
3. The Huns—Chalons (451 A. D.).
4. The Vandals.
5. The Ostrogoths.
6. The Anglo Saxons.

Problems:

1. Trace the growth of Democracy throughout this early period.
2. The great fusion of Oriental, Greeco-Roman culture.
3. The Causes and Results of the Germanic, Arabic and Mongolian Invasions after the Fall of Rome.

XII. New Forces in World History:**A. Christianity as a Social and Religious Force:**

1. Reasons for its rapid spread.
2. Why Jews and Christians were persecuted.
3. Constantine and Edict of Milan.
4. Theodosian Code.
5. Primacy of bishop of Rome—Patrine tradition.
6. Monasticism: Economic and social aspects.
7. Church officials supply lack of government in the west.
 - a. Force for order in an age of disorder.

8. How Europe became of one church.
 - a. Roman missionaries.
 - (1) The Franks.
- B. Teutons:
 1. Ideals and religion—government.
 2. Influence upon decadent Rome.
- C. The Mohammedans:
 1. Mohammed and his religion: Koran.
 2. Conquests—Tours (732 A. D.).
 3. Contribution to civilization.
 - a. Science and architecture.
- D. Reconstruction in northern Europe:
 1. Alliance of Frankish Kingdom and Legacy.
 - a. Home and Characteristics of Franks.
 - (1) Clovis—Soissons.
- E. Merovingian or “Do Nothing Kings.”
- F. Rise of Carolingian Kings.
 1. Charles Martel—Tours.
 2. Charlemagne.
 - a. Statesman and Warrior.
 - b. Relations with Church.
 - c. Crowned Emperor 800 A. D.
 - d. Friend of Culture.
 - e. Successors to 900 A. D.
 - (1) Treaty of Verdun (843).
 - (2) Disorder in Europe.

Problem:

1. Summarize the important contributions of the ancient World to modern times.

For example:

What Egypt gave to world.
What Tigris Euphrates Valley gave to world.
What Phoenicians gave to world.
What Hebrews gave to world.
What Greece gave to world.
What Rome gave to world.

2. Feudalism was better than anarchy.

3. Trace as many modern customs and superstitions as you can back to the Middle Ages.
4. Show how absolutism was a natural outgrowth of feudalism.

CIVICS

Eighth A

1. General Aim:

- A. To teach the forms of government, its agencies and functions.
- B. To show how the government serves community interests, and the interests of the individual; and how the government is dependent upon the individuals in promoting its interests and operation.

2. Abilities to be developed:

- A. Ability to draw general conclusions from concrete illustrations.
- B. Ability to use facts in solving problems.
- C. Ability to respect public and private property.
- D. Ability to appreciate human institutions.
- E. Ability to appreciate human interdependency.
- F. Ability to have an openmindedness toward all problems.

Outlining of material.—The work of the grade centers around the necessity for government, the relations between government and the citizen, and government of the local community; also the government of the state, and the nation.

1. As a preparation for understanding government, consider the group life in the family, the home, the school, the church, the development of the community, and the problems of community life.

2. The services of the community to the citizen through the organization of the city, the state, and the nation.

- A. The local community serves the citizen by providing for the protection of health, care of property, education, recreation, and the care of the handicapped people.
- B. The state serves the citizen by aiding in the construction of roads, in improving methods of communication and transportation, and by providing general education.

- C. The nation serves the individual by carrying mails, by controlling interstate communication and transportation, and by providing for the rights of citizenship.
- D. The duties of the citizen to the communities which serve him; obedience to law, honest voting, duty to vote, payment of taxes as provided by law, and response to any call of the community for service.
- E. The industrial problems: the working conditions, the control of the industry, and cooperation in industry; that team work is as necessary for success in industry as it is in athletics.
- F. Organization of the local government.
- G. Services of the local government for the citizen.
- H. Comparison of local government with that of other cities and also cities in Europe.
- I. Organization of the State Government:
 - (1) Its relation to local, and to National Government.
- J. The National Government:
 - (1) Its organization.
 - (2) Comparison with governments of other countries.
 - (3) The National Courts.
- K. The development of political parties.
- L. Three important problems of political, social, and industrial significance.
 - (1) Tariff.
 - (2) The Corporation.
 - (3) The Labor Union.

Procedure: In this grade the work is done by means of formal study of problems, it is also accomplished by observation and investigation by the children themselves.

Bibliography:

- Hill, H. C., Community Civics and Civic Problems.
- Dunn's Community Civics and Rural Life.
- Hughes, R. O., Community Civics.
- Giles, Vocational Civics.
- Beard and Beard, American Citizenship.
- Woodman and Moran, The American Community.
- Munro and Ozanne, Social Civics.
- Cloud, A. J., Our Constitution.

OUTLINE
OF
GEOGRAPHY

GEOGRAPHY OUTLINE

Grade 7

General Aim:

a. "The stimulating of an intelligent inquisitiveness and an inquiring interest as to the world, the skies above and the waters around about, and the conditions of nature that limit and shape the development of mankind."

b. To secure on the part of pupils ability to interpret properly the geographical factors that enter into problems of timely moment.

c. To teach pupils the importance of a wise governing group of leaders in developing natural resources, the need of learning conservation and cooperation, and the dependency of man upon nature and man upon man.

d. To assist pupils to an organized knowledge of geography as the interaction of man with his terrestrial environment.

e. To teach *children* geography and teach geography to children. Find the point of contact with the child's mind, motivate the work, develop interest and initiative.

Specific Aims:

a. To develop an appreciation of the importance of the U. S. intrinsically, and its relational aspects to the world as a whole; to challenge the interest of pupils to the study of the development of the United States, its resources, its people, and the nation that it has become, as—

1. A world power in its influence.
2. To conditions of life and ideals of the people.
3. To industrial and commercial life of the world and our relation to such.
4. The center of the highways of the world.

b. To present the continent of Europe as the background and home of white civilization, the center of much human progress, the homeland of Americans, and its industrial, social, economic relationships with the world, and with us especially, particularly emphasizing the Great Powers.

- c. Supplement the history course by arousing in pupils—
 1. A worthy pride in the development of resources and of industries which have developed so rapidly.
 2. A sense of ownership that entails obligations.
 3. An appreciation for the struggles, endeavors, successes and failures of our forefathers in their achievements with and over the forces of nature. The heroic pioneers give ample material for the human element to function in the geography work.

NOTE—Seventh Grade Geography touches upon Geography, History, Civics and the relationships we think of under Social Science. The History and Geography of any region are closely related. They should be constantly and reasonably co-ordinated, but so as not to lose the identity of either. Some teaching of the simple background of history is essential to geography. Often choice literary gems crystallize the spirit of the people and their study will serve your purpose well. We should also show the relation of a good or bad government to progress in industries, transportation, growth of cities, etc., and our responsibility as part of government.

Methods and Helps:

1. The text book (basic text).
2. School reference books.
3. The public library.
4. Illustrative material.
5. Pictures and printed matter.
6. Current literature.
7. Correlations in Geography.
8. Pupils' outline maps.
9. Problem study.

Standard of Attainment:

a. Ability to use reference books, maps, charts, and tables intelligently, and to find the controlling physical conditions of a continent or region.

b. To draw inferences from the study of maps that may be corroborated, generally by information found in reliable texts and references.

c. To work out problems and projects using related knowledge and information.

d. To gain an inquiring and intelligent interest in national problems and in international affairs.

e. To gain a knowledge of the larger typical industries as carried on:—centers, conditions, favorable and unfavorable, problems of production and transportation.

f. To gain a knowledge of larger cities, reasons for their importance in national life; of national parks, scenic wonders, of the outstanding facts of engineering, etc.

g. To obtain knowledge of place geography assigned, so that important places named in general reading may be located mentally.

h. To learn to like the study of Geography.

i. To understand with some degree of sympathy the problems of other races and other countries.

Assignment of Work:

Winds and Currents—three or four weeks.

Europe and the United States and review the rest of the year, three times a week.

NOTE—Possibly three-fourths of the time should be given to a study of the five great nations of the continent when it comes time to take up Europe; Great Britain, France, Germany, Russia and Italy. Frequent comparisons or contrasts should be made, the commercial interests and relations of the European countries with the United States and the South American republics should receive much attention.

The outlines suggested and given for British Isles and France could be adapted to other countries.

Outline for Europe:

This continent has been the center of the world's geography from which all explorations and conquests of the world in the last four hundred years and more have gone out. It is the home of the hardy and intelligent races that have had the energy to explore and master the world. Europe is the background of the myths and legends and historical tales with which children have been made familiar in previous grades.

I. Procedure:

1. Make a general survey of the continent preparatory to study of the same:
 - a. Make frequent comparisons of geographical facts and conditions of Europe with those of North America and Asia.

- b. Arouse interest in Europe by placing emphasis in our historical relation to Europe, e. g.: population in the U. S. in 1790 was 3,000,000; at present it is 105,000,000. Where did the increase come from?
2. Make a general study of each region.
3. Study intensively three countries:
 - a. Great Britain.
 - b. France, and
 - c. One other country selected because it will give pupils more complete information about Europe and better understanding of its peoples than it is possible to gain in the study of Great Britain and France.

II. Regional Geography:

1. The Northwestern Highland (Scandinavian Highland) Peninsula, together with Northern Scotland.
 - a. Why does so large a proportion of the population get a living from the sea?—Scotch sailors are all over the world. Glasgow is a great ship building port. Norway, before the war, had “more ships in proportion to her population than any other country—twice as many as England, four times as many as Greece, and from ten to fifteen times as many as the U. S. or Germany.” The fishing industries are valuable. How does the climate help to keep the people from falling to a low standard of living? Why is there so little manufacturing, and how has this helped to make the people thrifty? Why are cattle-raising and lumbering as industries carried on in ways different from the ways we are familiar with?
2. The Western Lowland (England, France, Belgium, Netherlands, Germany and Austria).
 - a. Compare with the North Atlantic Lowlands as to location for commerce, area, and coast line.
 - b. Study climate, mineral deposits, agricultural possibilities.
 - c. Compare with New England and Northern Atlantic states in industries, etc. (It is said that more than one-half of the world's manufacturing was done in

this area before the war, and that more than one-half of the world's commerce was carried by this section).

3. The Great Eastern Plains (practically all of Russia, largely Slavic people).
 - a. Notice how, in position, Russia stands apart from the regions of industrial and commercial activity; how marked is the contrast of the magnitude and solidarity of Russia and other great European powers, how the various parts have little relation to one another, and consequently little interest in one another's affairs.
 - b. Compare the position of Russia with that of Canada, and of life in Russia with life in Canada.
4. Southeastern Basins—(Austria, Hungaria, Roumania)—Meeting ground of the races.
 - a. Barrier mountains that inclose the Southeastern Basins. Routes by which these basins come into contact with the outside world. Poland was once one of the leading nations of Europe, but it was later partitioned among Russia, Prussia and Austria. Show why physical features of that part of Europe make it difficult to maintain an independent nation there. What is meant by a "buffer states?" Why is the lot of such a state precarious?
 - b. What is the value of the Black Sea and the Dardanelles?
 - c. Compare this region with the prairie states of U. S. as to area, climate, products, and trade possibilities.
5. The Central Mountains—(The Central Plateau of France, Switzerland, Austria, Alps, the Carpathians).
 - a. Why has Switzerland developed the nitrogen fertilizer industry? Hydro-electric plants—compare with such plants in our own country (Keokuk, Iowa, and Niagara).
 - b. Why do not the Swiss turn to general manufacturing? Bring out such facts as:
 - a. Lack of most raw materials except wood and hides.

- b. Importation of materials unduly expensive because of natural conditions that hinder commerce, and because of tolls imposed by surrounding countries. Toy making a profitable industry. The great skill developed by the makers in wood carving and in manufacturing such articles as watches, delicate embroideries, etc.
 - c. Why do travelers go to Switzerland? (The great natural beauties; the attitude of the Swiss toward tourists).
6. The Peninsulas of the South (Iberian, Italian, Balkan-Grecian).
- a. The relation of physical features to political divisions. To what extent have the peninsulas of Europe given rise to different nations? Have Spain and Portugal always been separate? Are their similarities or their differences more noticeable (language, religion, ideals, etc.)?
 - b. Apply the same questions to Norway and Sweden. Is it probable that Denmark would have been absorbed into some other nation if it had not been so well defined by natural boundaries?
 - c. Study the physical maps of the Balkan Peninsula, and show how the topography makes for disunion and conflicting interests.
 - d. A half century ago the present Italy consisted of several independent states. Why was it practically inevitable that they should be joined in a "United Italy?" The northeastern boundary of Italy does not coincide with any natural line of demarcation. What connection had this with Italy's break with Russia in the recent war?

The British Isles:

- 1. Location; commercial importance of position.
- 2. Size. Compared with Colorado.
- 3. Surface, chiefly lowlands, except in the north.
- 4. Coast line—deep indentations, affording excellent harbors.
- 5. Climate; effects of warm ocean currents influence upon industries. Compare climate with that of Colorado.

6. Industries and products:
 - a. Agriculture—food chiefly imported. Why?
 - b. Mining—location of minerals, such as coal, tin, iron.
 - c. Manufacturing—the leading industry. Favorable conditions cotton, iron, steel, wool, linen.
 - d. Commerce—Rank of Great Britain, and reason. Commerce with United States. Exports and imports.
 - e. Grazing—sheep, cattle.
 - f. Fishing—fishing grounds, varieties of fish caught.
7. Cities—London, Liverpool, Manchester, Glasgow, Belfast.
8. People and language—Most closely related to us of all European peoples. Characteristics.
9. Government—people enjoy the greatest degree of freedom under a king. Colonial possessions. Meaning of “British Empire.” Most successful in building up colonies all over the world. Locate them.

France:

1. Position with regard to neighboring countries.
2. Area compared with that of other European countries; with that of Colorado.
3. Surface and drainage—Lowlands—location and slope; Highlands location, bordering mountains; Mt. Blanc. Four principal rivers, direction and outlets.
4. Climate—Latitudes of Paris and Denver compared. Effects of prevailing westerlies on temperature and rainfall. Influence of the Mediterranean.
5. Government and People—Called Gaul under Caesar; an empire under Napoleon, a republic at present. Compare with republic of United States.
 - a. People—intelligent, industrious, thrifty, patriotic, love for the beautiful shown in art, manufacturing and in cities.
 - b. Language—French, studied and spoken in many countries.
6. Industries—
 - a. Agriculture—A country of small farms, tilled by the owners who live in neighboring villages. Wheat.

grapes, olives, oranges, nuts and vegetables the chief products.

- b. Coal and iron not plentiful, chief mines on the Belgian border.
 - c. Manufacturing—French manufacturers consisting of silk, cotton, and woolen goods, gloves, pottery and notions. Noted for artistic design, fine quality and skilled workmanship.
 - d. Commerce—extensive commerce carried on with neighboring countries and the United States.
7. Cities—Paris—location, commerce, museums, galleries; Havre, Bordeaux, Marseilles—importance of each.
 8. Colonies—Possessions in Asia, Africa and America, and Island possessions.

Problems

Europe:

1. Why should we Americans be so interested in the people of Europe? In our immigrants? In language? In the imports of Europe? In the exports of Europe?

2. Why is it that Europe has so many small countries, and so many of these in the western section?

3. If an American tourist visited ten countries in Europe, what would they be? What places would he likely visit? What clothing would he wear, and what different foods would he eat?

4. If you were a buyer for Marshall Field's what goods would you buy in France? Italy, England? Germany?

5. Before the war more than one-half of the world's manufacturing was done in Western Europe and one-half of the world's commerce. Why?

6. What does the position of Europe and the character of the surface suggest as to the temperature conditions?

7. How far is the importance of Europe and the advanced conditions of its inhabitants due to the surface?

8. Judging from the nature of the climate and surface what would we expect to be the leading occupations of Europe?

9. What is there about the Mediterranean region which made it favorable to the early development of civilization?

10. What advantages has Constantinople as a possible capital of the League of Nations?

11. Why are the people of the Eastern Lowlands of Europe as a whole much behind those of the west in comforts and arts of modern life as well as industries?

12. What new ideals regarding countries have been spread abroad as a result of the World War?

13. What are some of the causes which led Great Britain to become one of the leading manufacturing nations?

14. What conditions have determined the location of the great modern industries?

15. Was it a good thing that the English people allowed agriculture to decrease in importance, while at the same time the population was increasing? Discuss from point of view of food supply, city, factory and out-door life.

16. What is needed by the people of both Portugal and Spain as a foundation for modern prosperity?

17. Why did Norway and Sweden remain neutral during the World War, although Germany sank many of their ships?

18. Why did the Germans at the beginning of the World War attack through Belgium instead of taking a shorter and more direct route toward Paris?

19. What is the effect on the industries of Holland and Denmark of the absence of coal and water power?

20. On what basis have the boundary lines of the new German Republic been drawn?

21. What natural disadvantages does North Germany possess as an agricultural region?

22. What advantages has Germany as a manufacturing country?

23. What characteristics have the Czecho-Slovaks which lead us to believe they will regain their ancient position in European civilization?

24. Why has the little country of Switzerland, surrounded on all sides by powerful nations, maintained an independent existence?

25. How did the seizure of Northern France and Belgium at the beginning of the War give the Central Powers a great advantage?

26. Why have the French always led the world in the creation of beautiful things and luxuries?

27. Why was England the greatest sufferer from submarine attacks in the World War?

28. Why has England become the greatest commercial nation in the world? What were some of the ways in which her location aided her great development?

29. Why are the United States and Great Britain especially anxious to preserve trade relations with each other?

30. How are the colonial possessions of Great Britain of great advantage to her?

31. Why was Germany very willing to have war?

32. Why was Germany able to contend against the whole world for over three years?

33. Why is Russia very backward industrially and culturally, in spite of its enormous population and wonderful natural resources?

34. Why has Russia always wanted to control Constantinople?

Some Problems to Work Out: United States:

1. The United States is able to supply a home with almost everything that it needs, requiring to import but a little from foreign countries, and being able to sell many of her products. Why is this so?

2. Inside of one hundred and fifty years the U. S. has become one of the leading nations of the world. Millions of people from the corners of the earth migrated here. How does geography account for the strength, wealth, and advancement of this country?

3. Agriculture is the most important industry in United States. This was brought home to us forcefully during the recent war. We found out then that without the help of the farmer we could not have won the war. Why should this great army of workers be so important?

4. Why do America's great railroad lines run almost exclusively east and west?

5. The transportation of goods is one of the greatest industries in this country. How does this explain the distribution of population?

6. What natural barrier once prevented westward immigration in the United States? Why is it no longer a barrier?

7. How did our rivers in the United States affect the movements of our early settlers?

8. The United States has large seasonal changes, Northern South America has little change of temperature throughout the year. Which is more favorable to progressive civilization? Why?

9. Porto Rico and the Virgin Islands have plenty of rain on their northeastern coasts for agriculture, but little on their southwestern coasts. Why?

10. The opening of the Panama Canal impressed the value of our Pacific Islands. Why?

11. Why are the Great Lakes of more value to the farmer and manufacturer than is the Mississippi River?

12. What are the chief influences determining the location of the early towns in the Mississippi Valley?

13. How did the dangers of mountain travel in the early days compare with the dangers of the plains and plateaus?

14. What important steps mark the growth of industries in the valleys of the Pacific Slope beginning with the discovery of gold?

15. How is it that the United States has grown in so short a time into one of the greatest nations of the earth?

16. What influences have made the distribution of people in United States so unequal?

17. What causes in recent years have led many emigrants from Canada and Europe to settle in New England?

18. How do the methods of stock raising differ in different parts of United States?

19. What great advantages did the prairies offer for early settlement as compared with the other parts of the continent?

20. What advantages and disadvantages for farming are

possessed by the Western Highlands as compared with the Eastern?

21. What conditions determined the rapidity of settlement of different regions of North America?

22. What has determined the distribution of the leading industries of North America?

23. What are the causes which made some parts of the continent develop slowly?

24. How is it the French entered the lake regions ahead of the English?

HIGH MOUNTAIN REGIONS OR COLORADOAN CLIMATE

Prepared by George A. Barker

Professor of Geography, Colorado State Teachers College

I. Location.

1. The high mountain regions of the world.
2. Places: Rocky Mountains in North America 10,000 feet, Andes in South America 6,000 feet, Alps and Kiolen Mountains in Europe 6,000 feet, Caucasian and Himalayan Mountains, Hindu Kush, etc., in Asia. In Africa, Mt. Kilimanjaro and Mt. Kenia.

II. Climate.

Cold nights and warm, sometimes hot, days in the sunshine.

Two seasons a day. The sun shines brightly and produces considerable heat.

DATA FOR GRAPHS OF TEMPERATURE AND RAINFALL FOR COLORADOAN CLIMATE

	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.
Corona, Colorado—12,000 ft.												
Temperature, degrees..	3	4	7	13	16	24	41	50	49	38	30	20
Rainfall, inches	3.8	7.8	7.6	8.2	9.8	5.2	2.8	1.9	5.1	3.8	1.2	2.0
Lake Moraine, Colorado—10,000 ft.												
Temperature, degrees..	22	21	26	33	40	47	50	53	54	47	37	29
Rainfall, inches .....	.5	.6	1.0	2.9	3.8	3.5	2.5	4.2	3.2	1.8	2.0	.6

III. Plants or Vegetation.

Plants must adapt themselves to the sudden changes of temperature from 90 degrees in the sun to 24 degrees or lower at night.

1. The winds blow a great deal which causes the moisture in the plants to evaporate so the plants have to be able to retain the moisture and are therefore peculiar in structure, as follows:
 - a. They have spine-like cactus.
 - b. Hairy leaves, as sagebrush, greasewood, mountain sage.
 - c. Cattle eating this oily vegetation grow sleek and shiny, the milk is flavored with the oil, and cheese made from the milk has a peculiar flavor. Swiss cheese cannot be made in low countries. Goats and sheep are also raised in these regions. The milk of these animals is flavored with oily grasses, the hair and wool have a distinctly glossy appearance and is finer in texture. Other animals found here are mountain goats, alpaca, mountain sheep, chamois, yak.

See Robbin's "Climate and Vegetation of Colorado", Vol. 49, Botannical Gazette.

IV. Industries.

1. Agriculture is limited because of lack of space and heat and short growing season. Crops do not ripen. Grass and potatoes grow well. This is the native region of potatoes.
2. Grazing and mining are two most important industries here.
3. Exports and imports.
4. Cities or towns. Leadville, Cripple Creek, Corona; Murren, Switzerland; Quito, South America. Towns are scarce, and usually small because there are only a few things people can do to make a living; there are only a few places where cities could be built. The climate is too severe.

IV. People.

Study mountains of Colorado and Switzerland.

The population is scanty, but the people are rugged, brave and industrious, overcoming the climate's conditions and adapting themselves to its changes. Study Incas.

V. Maps and Graphs.

VI. Study Gold and Silver, Lead and Zinc.

Nevadan or Sagebrush Climate**I. Location.**

1. Lowlands of Colorado.
2. Great Basin in North America.
3. Patagonia, South America.
4. Central Asia, Desert of Gobi to Turkestan.
5. Central Spain.

II. Climate.

1. Arid climate in prevailing westerly region. Semi-desert region, dry and warm, with sudden changes of heat and cold.
2. Temperature averages from 50 degrees to 60 degrees F.
3. Usually brief vegetation season with short, heavy or fine drizzling rains.

III. Reasons for Nevadan Climate.

1. In eastern Colorado, where there are rainy summers and springs, with dry falls and winters.
2. It is not the amount of rainfall so much as when it occurs. In eastern Colorado the greater amount of rain (76%) falls during the growing season. In western Colorado 50% of rain in summer.
3. All parks sloping eastward get greater amount of rains in summer.
4. North Park, and other parks, get 70% in summer.
5. Best to have most rainfall in spring and summer.

Reasons for summer rains in eastern Colorado—Monsoon influences. Continental Divide is heated all over. Winds drift from Gulf toward heat. Little moisture, except on eastern side of mountains. Western side receives little rain from east winds. Thunderstorms often occur.

Air rising and condensing in Great Basin blown by westerly winds, so there is wet season in winter in mountains and dry on eastern plains. Steppes of Russia have summer rains. Asia is large and interior is far from the sea, similar to Great Plains. Desert of Gobi, summer rains. Patagonia, winter rains.

IV. Plants.

1. Summer rain brings grass. Every steppe or plain has summer rain.
2. Gramma grass, buffalo grass in eastern Colorado.
3. On western slope, where there is more winter than summer rain, perennials, like sage brush, thrive better than grass and annuals.

V. Industries.

Grazing.

Dry farming.

Commerce.

Desert of Gobi separates east and west Asia, is surrounded by mountains similar to Great Basin. Westerlies affect country open to sea.

Patagonia is dry because westerlies lose moisture on western side of Andes. Southern South America is narrow, so is never overheated. Similar to Washington, east of Cascades. Rain falls throughout year but mostly in winter. Sagebrush flourishes and sheep raising is important.

VI. Resources of Nevadan.

1. Cattle in eastern Colorado feed on grass.
2. Sheep on western slope feed on woody vegetation and grass.
3. Sheep industry is most flourishing in sagebrush region.
Sheep and goats—Gobi, Patagonia.
Horses and cattle on grass lands not browsers as sheep and goats.
Great plain of Colorado. Chinooks, dry winds.
Alberta open grassland.
Chinooks make eastern Colorado more of health resort.
4. Industries.
 - a. Herding. Cattle, sheep, horses, camels.
 - b. Farming. Dry and irrigated. Crops adapted to dry farming are plants from dry regions. Wheat, alfalfa, white Australian corn (silo), Mexican beans, Sudan grass from Sahara.
 - c. Tropical plants will thrive in temperate climates if crop will ripen in one-half year.

NEVADAN CLIMATE, NORTH LATITUDE

Dec. Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sept. Oct. Nov.
 Greeley, Colorado—Great Plains Bunch Grass Type

Temperature, degrees..	28	26	27	37	48	57	66	71	74	64	52	40
Rainfall, inches .....	.4	.2	.5	.8	1.7	2.5	1.4	1.9	.9	.8	.7	.5

Pocatello, Idaho—Great Basin Sage Brush Type

Temperature, degrees..	29	28	28	38	45	55	65	70	70	58	51	39
Rainfall, inches	1.0	.9	1.1	.8	2.0	1.3	.4	.2	.3	.4	.5	.9

Silver City, Oregon—

Temperature, degrees..	30	29	31	36	43	50	56	63	62	53	45	36
Rainfall, inches	1.2	.8	1.0	1.0	.9	1.2	.8	.8	.2	.5	1.1	1.1

Denver, Colorado, Elevation 5,280 ft.

Temperature, degrees..	33	29	32	39	48	57	67	72	76	63	51	39
Rainfall, inches .....	.7	.5	.5	.9	2.0	2.9	1.4	1.6	1.4	.8	.9	.5

Pueblo, Colorado, Elevation 4,650 ft.

Temperature, degrees..	33	30	31	40	51	60	69	74	73	65	52	40
Rainfall, inches .....	.5	.4	.5	.7	1.3	1.9	1.3	2.0	1.5	.4	.8	.3

NEVADAN CLIMATE, SOUTH LATITUDE

Rawson 43 51' S., 65 W.,

Patagonia—

Temperature, degrees..	67	70	68	66	56	49	42	43	45	51	56	63
Rainfall, inches .....	.6	.6	.8	1.2	2.5	3.0	3.2	2.8	2.6	1.1	1.0	.9

Santa Cruz 50 S. and 69 W.,

Patagonia—

Temperature, degrees..	54	61	56	52	48	41	34	33	38	43	47	52
Rainfall, inches	1.8	1.5	1.1	1.7	1.9	3.2	3.2	1.2	.9	.6	.7	.8

Mississippian

This is the most important region of the world because of its immense products.

I. Location.

East side of continents. Between 32 degrees and 48 degrees north and south latitude.

II. Places.

Eastern United States from Atlantic to 100th meridian, between 32 degrees and Great Lakes, Asia, Chinese Empire north of 32 degrees to the mountains west of Japan and Korea. Europe, southern Russia, Bulgaria, Roumania, and south and central Germany, Czecho-Slovakia, Hungary, Ingo Survia except coast,, Austria, north Italy, Po Valley.

Much time should be given to detailed study of these places).

III. Climate:

Winters and summers—hot summers, cold winters.

Winds.

Rainfall—Rainfall 25-60—mostly in spring and summer.

MISSISSIPPIAN CLIMATE

	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.
Bloomington, Ill.—												
Temperature, degrees..	29	25	24	39	53	64	72	76	73	68	56	40
Rainfall, inches	2.3	2.0	2.3	3.7	3.1	4.1	3.8	4.0	2.3	3.5	1.9	2.9
Charleston, Maryland—												
Temperature, degrees..	35	33	32	43	51	63	71	76	74	68	56	46
Rainfall, inches	3.2	3.1	3.2	3.6	3.6	4.0	3.9	3.9	5.0	4.0	3.0	2.9
Little Rock, Arkansas—												
Temperature, degrees..	44	41	44	53	63	70	77	81	79	73	63	51
Rainfall, inches	3.9	5.0	4.6	5.0	4.3	5.0	3.8	4.0	3.7	3.5	2.5	4.7

See Hardy's "Plant Geog." of Temperate Deciduous Forests.

IV. Vegetation:

Forest. Reasons for forests.

Prairies. Reasons.

V. Products:

Wheat, corn, fruits, animal products, coal, copper, and iron.

VI. People:

Characteristics, and one or more famous persons in each place studied.

VII. Trade:

Rivers, lakes, canals, and railroads.

Exports, imports.

VIII. Cities:

New York, Chicago, Buffalo, Cleveland, Philadelphia, Baltimore, Pittsburgh, Boston, Peking, Shanghai, Tokyo, Yokohama, Bucharest, Buna-Pestli, Belgrade, Milan.

IX. Make maps and locate countries of this climate all over the world. Make graphs of temperature and rainfall of typical places in this climate.

Californian Climate

I. Location:

Californian climate is found on the western coasts of continents, between 30 degrees and 40 degrees of latitude. Europe up to 44 degrees. United States, Central and south coast of California, Valley of California.

(See Magazine—Public Schools, Vol. I, Page 11, June 1915).

II. Seasons:

There are two seasons, the rainy season and the dry season. The rainy season is in winter when the land gets cool enough to form the moisture into rain. There is little snow. The rain falls in showers, then the sun comes out. In Los Angeles there are only forty rainy days in the year. Because there is so much sunshine in this climate there are many luscious fruits. In California there are more than 300 sunny days in a year. The countries of the world that are in the Californian climate are:

1. Asia—Coast of Holy Land.
2. Australia—Southwestern, southeastern, Victoria.
3. Africa—Southwestern coast in Cape Colony.
4. South America—Central part of Chile.
5. Europe—Mediterranean basin and Atlantic coast of Spain and Portugal.
6. North America—Coast of California.
7. Africa—North Algeria, Morocco.

III. The Big Trees of California:

The big trees grow on the western side of the Sierra Nevadan mountains. The peaks of these are covered with snow which melts and the water runs down the slope, giving plenty of water to these great trees. There is also plenty of rain for them. There are two great regions which have been made into National Parks. One is Yosemite National Park, the other is Sequoia National Park. Both are near the San Joaquin Valley. On the eastern side of the mountains is a place called "Death Valley," where rain seldom ever falls. In Californian climate the rainy season is in the cooler part of the year when the sun is farthest from the tropic. In the northern hemisphere the rainy months are November, December, January

and February. South of the equator the rainy season is in May, June, July, and August.

IV. Cities:

Most of the cities of the Californian climate are seaports.

In California are San Francisco, San Diego, Los Angeles.

In Chile are Valparaiso, Santiago.

In South Africa is Cape Town.

In Australia are Perth, Adelaide.

In Portugal are Lisbon, Oporto.

In Italy are Naples, Rome, Genoa.

In Spain are Malaga, Cadiz, Barcelona.

In France are Marseilles, Mentone, Nice.

In Greece is Athens.

In the Holy Land is Jerusalem.

Study each country with its cities.

V. Vegetation:

No specially good season, dry and hot.

No specially bad season, wet and cool.

Trees—Thick-leaved evergreens.

Kinds—Olive, holly, English walnut, almond, oak, cork, evergreen oak, mulberry, laurel.

Plants—Hard wheat, grapes.

Animals—Sheep with silky wool, Angora goat with silky wool, silkworms.

(See Hardy's Plant Geography "Mediterranean Woodland.")

(See Schimper's Plant Geography, "Warm Temperate Regions with Moist Winters".)

VI. Study nuts, olives, fruits, wine, quicksilver.

DATA FOR GRAPHS OF TEMPERATURE AND RAINFALL FOR CALIFORNIAN CLIMATE

	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.
Los Angeles, California—												
Temperature, degrees..	56	54	55	57	60	63	67	71	72	70	62	50
Rainfall, inches	3.8	2.7	2.6	2.5	1.2	.5	.2	.0	.0	.0	.7	1.3
Perth, Australia—												
Temperature, degrees..	71	76	76	73	68	63	58	55	55	56	62	67
Rainfall, inches	1.0	1.0	1.1	1.2	2.0	5.0	6.5	6.0	5.7	3.2	3.5	1.1

Algiers, Algeria—

Temperature, degrees..	55	54	55	56	60	64	68	73	78	75	70	64
Rainfall, inches	5.7	5.0	4.5	4.1	3.2	2.5	.5	.0	.4	.2	.4	4.9

Valparaiso, Chili—

Temperature, degrees..	62	62	62	61	59	57	57	55	54	54	55	58
Rainfall, inches	1.0	.0	.0	.8	1.0	3.0	4.0	3.0	1.9	1.0	.6	.5

Cape Town, South Africa—

Temperature, degrees..	66	70	70	68	67	61	58	56	56	57	60	67
Rainfall, inches	1.0	1.0	1.0	1.1	1.5	4.2	4.5	3.6	3.5	2.0	1.8	1.2

Naples, Italy—

Temperature, degrees..	47	48	50	56	61	67	73	76	73	68	60	52
Rainfall, inches	4.0	3.5	3.0	3.0	2.5	1.5	1.2	0.8	1.1	2.5	4.0	5.0

Oregonian Climate

I. Location:

On the west coasts of continents between 40 degrees and 50 degrees of latitude. Because it has a higher latitude it is cooler than the Californian climate and has more rain. It has fewer days of sunshine, but the days are longer in summer and shorter in winter than in Californian climate. Places that are in the Oregonian climate are: Oregon, Washington (west of Cascades) Southern Chile, Northern Spain and Portugal, France, Ireland, England, New Zealand, Tasmania, Belgium, Germany, and Denmark. There are two regions, wet and less wet. The wet region is west of the mountains along the coast.

II. Less Wet:

In the Willamette Valley and in the sheltered region we find grain and fruits. We do not find so much grass or dairy products. Sheep are raised in Oregon, Washington, England and New Zealand. In the Oregonian climate we find the most healthful regions for white folks. Blonds especially thrive in this climate. The death rate in Portland, Oregon, is lowest, which is probably due to low infant mortality due to cool summers. Then comes Seattle, Tacoma, New Zealand, Christ Church and Tasmania. Children do well because there is no great heat, nor the extreme cold. They are not so apt to have pneumonia. Old people enjoy this climate, as it is not too hot or too cold. Blonds came originally from Northwestern Europe, which is Oregonian. People, like plants, thrive best in their native climate. They adapt themselves to foreign climates, but never do their best in them. Some transferred

plants are potatoes, native of Southwestern Chile, hops, and apples.

III. Cities:

London, Paris, Hamburg, Portland, Oregon, Seattle, Victoria, B. C., Auckland and Wellington, N. Z., Hobart, Tasmania; Eureka, Calif.

(See magazine Public Schools, Vol. I, Page 11, May, 1915, for larger treatment of Oregonian climate).

IV. Wet Region:

In the wet region it rains all the year round, but the heaviest rains are in winter. The heaviest rainfall is at Glenora, Ore. The annual rainfall is 136 inches. In the wet region we find very large trees and great forests. There is also plenty of good grass, but very little grain or fruits, because there is not enough sunshine to ripen the fruit or the grains. Occupations of the wet region are: grazing, dairying and lumbering. Here we find the largest lumber mills in the world along Puget Sound. The trees are mostly evergreens, such as Douglas fir and Oregon pine.

V. Study Dairying and Lumbering.

VI. Maps and Graphs.

DATA FOR TEMPERATURE AND RAINFALL GRAPHS FOR OREGONIAN CLIMATE

	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.
Valentine, Ire., W'rd—												
Temperature, degrees..	44	45	46	47	50	53	55	58	59	55	52	48
Rainfall, inches	5.8	6.6	5.1	4.1	4.0	3.1	3.7	4.0	5.0	4.2	2.3	5.5
Seattle, Wash., W'rd—												
Temperature, degrees..	43	41	42	45	50	55	60	64	64	57	52	46
Rainfall, inches	5.9	4.3	4.7	3.7	3.0	2.1	1.8	8.0	5.0	2.2	2.9	6.5
Portland, Ore., L'rd—												
Temperature, degrees..	42	39	42	47	51	57	62	67	66	61	50	46
Rainfall, inches	7.5	6.5	6.0	5.0	3.0	2.5	1.8	7.0	8.0	1.5	2.7	6.5
Greenwich, Eng., L'd—												
Temperature, degrees..	40	38	40	42	49	55	60	65	64	55	50	46
Rainfall, inches	2.0	2.0	1.8	1.7	1.8	1.8	.8	2.7	2.5	2.5	2.9	2.3
Christ Church, N. Z., L'd—												
Temperature, degrees..	61	62	61	57	52	50	49	49	43	46	49	54
Rainfall, inches	1.5	1.9	1.8	1.8	2.0	2.0	2.9	2.1	1.7	1.7	2.0	1.9
Hokitita, N. Z., W'd—												
Temperature, degrees..	58	61	59	52	52	50	47	45	47	49	52	50
Rainfall, inches	11.9	13.1	9.8	8.8	7.1	4.2	4.1	2.2	2.4	5.9	8.0	12.8

Floridan Climate

I. Location:

- a. East coast of continents.
- b. Latitude $23\frac{1}{2}$ degrees north and south.
- c. Places.

In North America, southeastern states, south of 32 degrees parallel, including eastern narrow coast of North Carolina and Georgia and Eastern Mexico. West as far as Corpus Christi, Tex.

In South America, from Rio de Janeiro to La Plata; to Paraguay.

In Asia, from Hong Kong to Shanghai.

In South Africa, from south coast to Lorenzo Marques.

In Australia, from Sydney to tropic.

II. Winds:

In trade and wind belt. Heavy rains in consequence. Heaviest in summer, because belts shift to the equatorial in winter. No dry season. Trades shift over here most in summer, east in winter.

III. Vegetation:

Plant life under ideal conditions. No dry season. Thick-leaved evergreens, tea, mulberry, sugar cane, rice, cotton, sweet potatoes, oranges and other citrous fruits.

IV. Cities:

Hongkong, China; Hamilton, Bermuda; Durban, Natal; Brisbane, Australia; Mackey, Australia; Rio de Janerio, Brazil; Sao Paulo, Brazil; Asuncion, Paraguay.

V. People:

Population dense, due to slight changes of temperature, and easy life conditions.

VI. Industries:

Study:

1. "Essentials of Geography," Agriculture, pp. 120-123; Cities, pp. 126-28, 361-362.
2. Tea, cotton, rice, silk, phosphate rock, fruits.

VII. Give two famous persons of each country.
Give characteristics of people.

VIII. Maps and Graphs.

DATA FOR TEMPERATURE AND RAINFALL GRAPHS FOR FLORIDAN CLIMATE

	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.
Hatteras, North Carolina—												
Temperature, degrees..	48	45	46	51	57	67	74	78	78	74	65	56
Rainfall, inches	5.2	5.1	4.5	5.4	4.2	4.2	4.8	6.3	6.1	5.6	6.4	4.7
Fort Myers, Florida—												
Temperature, degrees..	64	62	65	68	72	77	80	81	81	80	75	70
Rainfall, inches	1.9	2.1	3.1	2.8	2.5	3.2	11.0	8.6	7.6	8.1	3.1	1.1
Point Eads, Louisiana—												
Temperature, degrees..	58	56	57	62	68	75	80	83	82	80	73	66
Rainfall, inches	3.9	4.0	4.3	3.8	3.7	2.8	4.0	7.2	7.8	6.3	4.5	2.9
Miami, Florida—												
Temperature, degrees..	69	65	67	71	74	76	81	82	82	81	78	74
Rainfall, inches	1.6	4.0	2.5	3.1	3.5	4.5	8.2	7.0	5.4	9.1	7.1	2.3
Galveston, Texas—												
Temperature, degrees..	57	53	56	62	69	76	82	84	83	79	72	63
Rainfall, inches	3.8	3.7	3.1	3.1	2.9	3.3	4.6	4.0	5.1	5.7	4.3	4.0

Caribbean Climate

The Chief Tropical Climate

I. Location :

1. Kipling's "Mandalay."
2. O. Henry's "Cabbages and Kurep."
3. Joseph Conrad's "Nostromo."
4. Latitude $32\frac{1}{2}$ degrees to 5 degrees north and south.
5. Places :
 - a. Nearly all of Brazil, all of the West Indies, and Northern and South American coast.
 - b. Central Africa, except Congo Valley and West coast.
 - c. Coast of India, Ganges and Indus Valleys.
 - d. Indo China, Philippines, North Australian coast, and Hawaiian Islands.

II. Dry 3 to 6 months. Wet the rest of the time.

No changes of temperature to speak of.

Dry season in winter when sun is farthest away.

Drier on leeward side of islands.

III. Vegetation:

Plenty of grass.

From forest to grass, according to rainfall.

Deciduous due to dry season; not cold.

Savanna and Monsoon chapters in Hardy's Plant Geography.

Schimper's Plant Geography "Tropical regions with dry season."

IV. Animals:

Cattle are present because of luxuriant grass.

V. Cities:

Manila, Havana, Kingston, Janravea; Calcutta, India; Mandalay, Burma.

VI. Crops.

VII. Industries:

Products. "Essentials of Geography," West Indies, pp. 216-217.

Coffee, p. 227; Cacao, p. 226.

India tea, silk, p. 352; Indo China, p. 354.

Central Africa, Northern Australia, Philippines, etc.; pp. 195-197.

Hawaii, p. 193.

Cane sugar and beet sugar manufacturing.

VIII. Maps and Graphs.

IX. Study intensively the Panama Canal.

DATA FOR TEMPERATURE AND RAINFALL GRAPHS IN THE CARRIBBEAN CLIMATE

	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.
Alfred Mauritius Island—												
Temperature, degrees..	78	79	78	77	75	72	69	67	68	70	72	75
Rainfall, inches	5.2	7.2	6.1	8.6	5.9	4.0	2.0	2.4	2.4	1.4	2.6	2.8
Guatemala, Guatemala, C. A.—												
Temperature, degrees..	61	61	62	66	67	68	66	66	66	66	65	63
Rainfall, inches	1.5	.4	1.5	.5	1.1	5.6	11.5	8.0	8.0	9.1	6.7	.9
Antigua, St. Johns—												
Temperature, degrees..	77	75	76	77	78	79	80	80	81	80	80	78
Rainfall, inches	3.7	3.4	2.4	2.3	3.6	4.6	4.4	5.2	5.2	6.4	5.9	5.4
Majunga, Madagascar Island—												
Temperature, degrees..	79	80	80	82	81	78	75	75	76	78	80	81
Rainfall, inches	9.1	16.1	17.1	8.7	3.1	.2	.0	.0	.1	.1	1.1	5.1

Mexican Climate

A Dry Tropical Climate

O. Henry's Stories of S. W. Texas.
Roosevelt's "African Game Trails."

I. Location:

a. Between the Floridan and Arizonian regions. It is sometimes called the Thorn-belt region.

b. Places:

In North America is Western Northeast Mexico.

In South America is Southwest Brazil.

In Asia, The Deccan in India.

In Africa, South Central part also N. E. part.

See Hardy—Caatinga or Other Forests—E. Africa.

II. Climate:

The climate is hot and dry, but has more rain than the Arizonian regions. There is little if any cold weather or frost.

III. Industries and Products:

Farming is carried on extensively if water can be had for irrigation. Grazing is the natural industry and is more profitable than farming. Mining in Mexico is especially important. Much lead, zinc and silver are obtained. Mexico leads the world in the production of silver. Other minerals are Mexican onyx (which has been used in our own state capitol building), iron ore, coal, quicksilver, jasper and other gems. Mexico is the second country in the world in production of copper. Minerals in India are: iron and coal; gold and rubies in Burma.

IV. Maps and Graphs.

V. Cities—San Antonio, Texas; Pretoria, Johannesburg, S. A.; Bourke, Australia.

Arizonian Climate

I. Location. Between 0 degrees and 32 degrees.

On leeward side of mountain. Driest in world. True deserts.

II. Regions:

Arabia, Sahara, S. Persia, S. Arizona, S. N. Mex., Central and N. W. Australia, N. Chile and S. Peru. Kalahari desert in Africa, Lower California, opposite Florida, places in Sahara no rain for three or four years.

III. Climate:

Hot summers. Hottest in world in Arizona; 125 degrees to 135 in Sahara. Salton and Needles contend for hottest. Needles has three rainy days a year. Mild winter.

IV. Vegetation:

1. In struggle for existence cactus loses leaves and stems to lessen evaporation (euphorbia).
2. Reduction of leaf surface, leaves covered with down. Yucca or soapweed for storage of water.
3. Plants have very long roots. Alfalfa extends down 30 to 40 feet.
4. Resting stage three or four years. If a rain occurs, plants will be growing well in three or four days. Bulbs store up food and water and rest for a time.
5. Animals: Fleet of foot. Travel fifty or sixty miles a day to feeding grounds. They avoid enemies by "a get-away." Struggle for existence is great. Sluggish kinds of animals—Gila monster, lion, reptiles, lizards. Little food for a long time.
6. Man.

Through stages of culture:

- a. No beast of burden, Bushmen of Australia.
- b. With beasts of burden. Navajos.
- c. Irrigation. Egyptians, Peruvians and Babylonians, Arabs war-like. Dried-up water holes. Pestilence, death. Fight for food and water. They worship the sun and rain for crops. Aztecs peaceful, almost civilized.

DATA FOR TEMPERATURE AND RAINFALL GRAPHS FOR ARIZONIAN CLIMATE

Dec. Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sept. Oct. Nov.

Omdurman,

Lat. 15 deg. 38 min. N.—

Temperature, degrees..	76	73	80	83	87	93	90	90	87	90	90	82
Rainfall, inches .....	.0	.0	.0	.0	.0	.0	.6	.5	.1	.0	.3	.0

Cairo, Egypt,

Lat. 30 deg. 4 min. N.—

Temperature, degrees..	58	54	57	53	70	75	83	84	82	78	74	64
Rainfall, inches .....	.2	.2	.2	....	.1	.2	....	.0	.0	.0	.0	.0

Wadi Halfa, Sudan,

Lat. 21 deg. 55 min. N.—

Temperature, degrees..	63	59	63	71	81	88	91	91	89	83	82	70
Rainfall, inches	Drops 15 times in ten years.											

Yuma, Arizona—

Temperature, degrees..	56	54	59	61	70	77	85	92	91	84	76	62
Rainfall, inches .....	.4	.4	.5	.3	.1	.0	.0	.1	.3	.1	.2	.3

Amazonian Climate

Roosevelt "In the Brazilian Wilderness".

Hardy's "Selvas".

Schrimper's "Tropical Regions Constantly Moist".

I. Location:

These climates are found along the equator in the Doldrum belt. Places —the Amazon Valley, Congo Valley, and Malay Archipelago, and Malay Peninsula. The Doldrum belt is the rainy belt in the equatorial calms and follows the heat equator. It is in the region of winds.

II. Climate:

There is an excess of rainfall. Nearly every day there are heavy rains. In the rainy season the rains are heavier and last longer than in the less rainy season. The heat is intense, steamy and sultry, and favorable to plant growth. There is a struggle for light. Always about twelve hours of daylight. There are no seasons. The trees shed individual leaves.

III. Plants:

There are heavy forests all over these regions. The trees are evergreen with broad, thick leaves. Fruit is found in all stages on the same tree. The bark on the trees is very thin because they do not need to preserve moisture. This protects the rest of the plant from too much sun. Plants must have air and sun as well as moisture, so we find plants growing tall with their foliage, their fruits and blossoms near the tops of the trees. There are three layers of vegetation; canopy, climbers, undergrowths.

IV. Animals:

The animals of these regions live in trees so they can get food. Snakes, birds, monkeys, sloths and insects, parrots.

V. Products:

Study rubber and quinine. Rubber is obtained from eight or ten kinds of trees and plants. Mahogany, rosewood, ebony, cocoanuts, Brazil nuts, vanilla, pepper, quinine, allspice, cloves, and cinnamon.

VI. People and Industries:

We find the people of these climates very low in the scale. Pygmies in Africa. They need no shelter or clothing. Their food is found on the trees. There is no need of industry. The products of commerce are gathered by the natives for white men who live there only for a short time each year.

VII. Maps and Graphs.

DATA FOR TEMPERATURE AND RAINFALL IN AMAZONIAN CLIMATE

	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.
Grand Bassum, Africa—												
Temperature, degrees..	81	80	81	83	82	80	78	76	75	75	78	80
Rainfall, inches	4.3	1.6	1.6	3.3	8.0	17.0	27.9	3.1	.8	1.8	5.2	7.3
Sierra Leone, Africa,												
Lat. 8 deg. 30 min. N.—												
Temperature, degrees..	79	79	80	80	79	79	78	76	75	76	77	78
Rainfall, inches	1.3	.6	.5	1.1	5.4	14.8	21.4	36.8	39.6	32.5	15.2	5.3
Akassa, Nigeria,												
Lat. 4 deg. 20 min. N.—												
Temperature, degrees..	79	78	79	79	80	79	77	76	76	76	77	78
Rainfall, inches	6.5	2.6	6.5	10.1	8.6	17.6	18.6	10.1	9.3	19.3	24.8	10.6
Ambonia, Molucca Islands,												
Lat. 3 deg. 41 min. N.—												
Temperature, degrees..	81	81	81	81	79	79	78	77	78	78	79	80
Rainfall, inches	5.7	5.6	4.5	5.4	10.9	20.5	23.9	23.3	16.1	9.1	6.9	4.1

VIII. Cities—Para, Brazil; Batavia, Java; Munrovia, Liberia.

Canadian Climate

I. Location:

The Canadian climate is located on the east side and interior of continents, between the parallels of 50 deg. and the polar circle ($66\frac{1}{2}$ deg.) north and south latitude. In North America, Canada, Newfoundland and Central Alaska. In Europe, Sweden, Northern Russia. In Asia, Siberia.

II. Climate:

Winters are long and cold, days are short. Snow falls and remains all winter. Cold is steady, the soil frozen. Temperature is lowest in the world. Summers are hot, but short; days are long. Rainfall is ample.

III. Life:

Plants are hardy. Trees are of the pine family, because the spiny leaves do not evaporate as much moisture as the broad

leaves. In the fall the soil freezes and the moisture is held in the soil. Pines do not need as much moisture as broad leaves. Animals depend upon surroundings. The moose belongs to the deer family; eats conifers. Fur-bearing animals abound because of the cold. Animals take on lighter-colored coats in winter. See fur-bearing industry. See Hardy's "Tiaga". See Newbian's "Animal Geography". Chapter, Tiaga.

IV. Industries and Products:

Mining of nickel, gold, iron, and asbestos is important. There is lumbering in Sweden, Finland, Russia, and Canada. Trees are cut when the snows are on the ground and hauled to river banks. When the snows melt the logs are floated to the sawmills. The snow is so hard that men stand on the crust to cut trees. Paper pulp is an important product of Canada. Matches come from Sweden. Wood carvings and woodenware are products of this climate. Fishing is an important industry.

V. Agriculture:

Grain ripens quickly due to long periods of sunshine in a day. The nights are too cool for corn to flourish. Wheat, potatoes, barley, rye, sugar beets in southern Canada. Black earth in Russia is good for rye. Russia leads the world in grain production. The peasants eat black bread made of rye. Vegetables of temperate zones abound. There is no cattle herding, but dairying is important. Because of cool climate grasses are long in summer. These afford pasture and hay for winter use.

VI. Paper:

Study paper making.

VII. Maps and Graphs.

DATA FOR TEMPERATURE AND RAINFALL GRAPHS FOR CANADIAN CLIMATE

	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.
Mayfield, Maine—												
Temperature, degrees..	20	16	19	29	41	52	61	66	64	56	45	42
Rainfall, inches	3.8	3.5	3.9	5.6	2.8	3.8	4.0	4.3	4.3	4.5	3.7	4.2
Saranac Lake, N. Y.—												
Temperature, degrees..	19	15	16	28	41	54	62	66	63	57	45	32
Rainfall, inches	2.4	2.6	2.4	2.8	2.1	2.9	4.1	4.1	3.4	3.2	2.8	2.8

Calumet, Michigan—

Temperature, degrees..	21	16	14	22	37	48	59	64	62	55	44	30
Rainfall, inches	2.9	2.6	1.5	1.6	2.1	3.1	3.3	2.7	2.9	3.5	3.0	2.5

Moscow, Russia—

Temperature, degrees..	14	12	13	22	35	52	64	66	62	50	40	30
Rainfall, inches	2.8	2.6	2.5	2.6	2.7	3.0	3.1	3.3	3.5	3.1	2.7	2.8

Montreal, Canada—

Temperature, degrees..	20	13	17	26	40	55	65	70	67	62	45	53
Rainfall, inches	3.5	4.0	3.4	3.4	2.2	3.4	3.0	4.0	3.3	3.6	4.1	3.1

Alaskan Climate

I. Location:

1. On western coasts of continents between 50 deg. and 65 deg. of latitude.
2. Countries: Alaska, Norway, southern part of South America, Scotland and Iceland, west coast of Canada, Faroe Islands, Denmark, and Falkland Islands.

II. Climate:

1. Differs from Oregonian in that it has longer winters, shorter summers, longer days in summer, shorter days in winter.
2. The land is cooler than the sea for longer time. Longer rainy season, less sunshine, and the rays of the sun are not as bright or warm as in Oregonian climate.
3. Rainy days. Some places in Alaska there are 250 rainy days a year. 365—250 equals 115 days not rainy. In Denver we have 3,000 hours of sunshine in a year. In Alaskan climate there are often only 560 hours of sunshine. Chicago has 2,600 hours of sunshine. Falkland Islands have 300 rainy days.
4. The Alaskan climate is divided into two regions.
 - a. Coast Alaskan or Continental Alaskan—50 deg. 54 min. S. Lat. West Norway Alaskan 54 deg. 40 min. Aleutian Islands. "Birds of Terra del Fuego."

References:

Alaskan Experimental Reports.
 Harriman "Alaskan Experiments".
 Cockayne "New Zealand Plants".
 Subanarctic Islands of New Zealand.

- b. Island Alaskan—Highlands of Scotland, Kerguelen, Falkland Islands, Tierra Del Fuego, Fairees, Shetlands, Hebrides, Campbell Islands, Shetland Islands.

There is a mountain wall near the coast of Alaska and Norway that cools the winds from the ocean, therefore the climate is very wet in summer and especially winter. The glaciers on the mountains help to cool the winds and make more rainfall.

III. Plants:

The slopes of the mountains are heavily forested near the base. Timber line is 2,500 feet. Grass grows in abundance.

IV. Industries:

There is very little agriculture, because there is so little sunshine. Grain will not ripen. Dairying and herding and lumbering are carried on. In Norway the people use the rapid mountain streams for power. A great deal of manufacturing is done. They make woodenware, hardware, fish, oil, cotton and woolen goods, and lumber. Cotton, linen, and woolen goods are made in Glasgow. Water power due to heavy rainfall.

Fishing: In all countries of Alaskan climate fishing is an important industry, because there are great quantities of food for the fish that swarm there to get food. There are also good harbors for fishermen to land in safety. Bergen, in Norway, is a great fish market. Mackerel, cod, herring, and oysters.

- V. Cities: Bergen, Norway; Sitka, Alaska; Punta Arenas, Chile; Fort William, Scotland.

DATA FOR TEMPERATURE AND RAINFALL IN ALASKAN CLIMATE

	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.
Sitka, Alaska—												
Temperature, degrees..	36	34	33	37	42	47	52	54	57	52	46	40
Rainfall, inches.....	10.0	9.9	10.5	1.0	6.1	5.0	3.7	5.3	6.9	11.0	13.5	14.2
Bodo, Norway—												
Temperature, degrees..	37	37	28	32	37	46	52	55	50	44	35	33
Fort Williams—												
Temperature, degrees..	38	40	40	42	46	52	56	54	52	43	41	40

13. Polar Regions

I. Location:

Between the circles and the poles.

Places: Lapland, Greenland, Northern Iceland, Northern

Russia, Northern Siberia, Northern Canada, and Northern Alaska.

II. Climate:

Two types—Oceanic Arctic, Greenland, Spitzbergen, N. Siberia. Continental Arctic, North America.

Temperature is very cold. The sun's rays are very slanting, there is little heat from the sun, and light is dim. Rainfall is abundant because of the oceanic position and very cold land surface. Fort Conger is very cold. It is always frozen and the winds have no effect.

There are two regions of Polar climate:

1. Marine Arctic. Greenland. Spitzbergen.
2. Continental Polar or "tundra" region. Lapland, North Siberia, North Alaskan, Barren Ground, Canada. In the marine Arctic region the rainfall is very heavy, with much snow. Winds from warm currents blow against the snow and melt it. Much of the land is thus covered with glaciers.

III. Vegetation:

There is very little land vegetation. A glacier apron. Mosses and lichens abound and give appearance of dry conditions. Perennials have waxy, downy coverings.

Oases in "tundra" are dry regions, not wet places.

IV. Animals:

Fur-bearing animals live in Continental Polar. They are peculiar in coloring, according to season. Weasels of summer form the ermine of winter. Protective coloring of both animals and birds is very noticeable.

V. People:

These regions are the homes of the Eskimos, Oceanic Arctic, and Laplanders in the Continental Arctic. These people are flesh eaters. Dogs for the Eskimos and reindeer for the Laplander are beasts of burden and main source of wealth. Contrast lives of these two people as to Arctic types.

VI. Maps and Graphs.

DATA FOR TEMPERATURE AND RAINFALL GRAPHS IN POLAR CLIMATE

	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.
Godthaab, Greenland—												
Temperature, degrees..	18	14	14	21	22	32	37	43	41	37	27	22
Rainfall, inches .....	.3	.1	1.6	2.7	.5	1.3	7.9	7.4	7.0	9.0	.7	.6
Nova Zembla, Russia—												
Temperature, degrees..	5	-7	-15	5	20	23	24	42	42	30	20	10
Rainfall, inches .....	.9	.7	.8	.5	.5	.4	.6	.7	.2	1.2	1.3	.1
Sagastyr, Siberia—												
Temperature, degrees..	-29	-35	-44	-28	4	16	33	40	38	32	5	-25
Rainfall, inches .....	.2	.1	.0	.0	.0	.3	.7	.3	1.4	.5	.1	.1
Fort Conger, Grinnell Land, W. Gr.—												
Temperature, degrees..	-32	-39	-47	-30	-9	17	33	37	33	11	-2	-24
Rainfall, inches .....	.4	.4	.1	.4	.2	.4	.2	.7	.5	.3	.3	.2

General Science

I. General Objectives:

To prepare a student for a more intelligent citizenship through a better understanding of the scientific phenomena related to his daily experiences. In order to accomplish the aim of intelligent citizenship the student will need to acquire a fund of knowledge about common things; a habit of thinking accurately in terms of his surroundings; an honest scientific attitude which will allow him to face without prejudice any phenomena or data.

It might be mentioned that this is a general outline only. Each teacher would do well to make out an outline of his own in order to put in detail the material which he wishes to teach. There are many things which would be put in a syllabus to be used in one locality and not to be used in another locality. One thing should also be emphasized and that is that in order to accomplish great results in general science a teacher should never attempt to teach from one book alone but should have at least a half a dozen up-to-date general science texts available to the members of the class, and frequent reference should be made by the instructor to these texts.

Believing firmly in beginning the education of the youth where the youth is found, the following general division of the study might be:

Home Life Science in the Home
 Civic Life Science in the Community
 Of course there will be overlapping in these two divisions.

Lighting for example, will be found in both sections.

A. The Laboratory Plan:

Since the object of course is to train students to interpret their own environment the best laboratory exercises are those which use common tools and materials and are performed by the student on his own initiative. An elaborate equipment is not only unnecessary, it is not desirable. Numerous experiments, demonstrations and exercises are profitable in aiding the student to better understanding and in stimulating the student to greater mental activity.

B. The Notebook:

In general the notebook should be kept by student for own benefit. The only excuse for a notebook is the giving the student an opportunity to think more accurately.

C. Science is an ever new thing and much reference work will prove profitable as well as interesting. Science current event period once a month affords an opportunity of acquainting students with the recent science publications as well as recent developments, and will accomplish much if properly conducted. The goal should be to get students to read discriminately and to form reasonable opinions in regard to current problems.

D. Preparation on the part of the instructor is the greatest aid in causing a student to think in terms of his surrounding. A teacher is not succeeding if the general science work does not modify the activities and thought processes of the student the other 18 hours of the day.

Unit I. Home Life:

A. *Specific Aim:* To acquaint student with factors which are involved in his home life so that he may better learn to appreciate home problems.

B. Problems to be solved:

1. How is a good food supply provided?

Discuss: Plant Foods—

Irrigation, fertilization, farm equipment.

Animal Foods —

Stock raising, shipping—need for sanitation.

Manufactured Foods.

2. What kinds of foods are there?

Discuss:

Sources of different kinds.

Tests for different kinds.

3. How are foods prepared?

Discuss:

• Refrigeration and preservation.

Cooking—What changes take place.

4. Why do you eat food?

Discuss:

The study of the body.

The relation of kinds of food to bodily processes.

5. What foods should you eat?

Discuss:

Relation of diet and climate.

Relation of diet and life activities.

Relation of diet and age, height and weight.

Working our proper individual diet.

6. How may a good water supply be obtained?

Discuss:

History of water supplies.

Sources of water supply.

How cities get water—standpipes and reservoirs.

Wells.

How pumps work.

How water is controlled in buildings.

Drainage systems.

Hot water systems.

How water is kept pure and how purified.

7. How is air kept pure?

Discuss:

Atmosphere.

The earth, climate, change of seasons.

Winds.

Relations of plant and animal life.

What pure air is.

Ventilation in buildings.

Effect on body of bad air.

Need of outdoor exercise.

8. How should a home be lighted?

Discuss:

History of lighting.

Sources of light.

Sun's light.

Gas light.

Kerosene light and candle light.

Gasoline and acetylene lights.

Electric lights.

Wiring of home.

Lighting a home properly.

How windows should be placed.

Walls and draperies and their relation to light, regulating light.

Cost of illuminating materials.

9. Of what may homes be built?

History of home building.

Sources of materials.

Kinds of materials.

Cost and durability of materials.

10. How are homes best heated?

Discuss:

Sun's heat.

Stoves.

Heating plants.

Electricity.

Sources of fuels.

Cost of heating.

Relation of heat and ventilation.

11. How can your home be made more attractive?

Discuss:

Freeing from pests.

Gardening.

Labor saving devices.

12. Care of individual in the home.

Discuss:

Cleanliness.

Sanitation.

Recreation.

Diet.

Clothing.

Unit II. Civic Life.

Problems to be solved:

1. How is your town supplied with water?
Field trips to source. Comparison with other communities. Maps of local system and more ideal system. Drainage. Sewage.
2. How is your town lighted?
Cost of illumination. Visit to local power plant. Street lighting system. Reading electric meters.
3. Fire Prevention:
Discuss: What fire is.
Causes of fires, preventable and unpreventable.
Fire prevention methods.
Fire protection.
Fire fighting systems.
Cost of local "fires".
4. Transportation:
Problems to be solved:
 1. Earth on which you live. What parts of earth are adapted for easy transportation?
 2. What are sources of fuel, metals, and power, air pressure, water and windpower?
 3. How do steam and gasoline engines work?
 4. How do electrical machines operate?
 5. What is history of transportation?
The steamship and steam railroad.
The gas engines.
Submarines.
Electric railways and engines.
Airplanes and airships.
5. Communication:
 1. How has man learned to communicate?
Discuss: Signs, symbols, words, pictures, counting, alphabet, printing and printing press.
 2. How does a telegraph operate?
Discuss:
A telegraph system.
A simple telegraph set up in classroom.
Brief history of telegraph.

3. How does a simple telephone operate.

Discuss:

How sound is produced.

The human voice.

How human voice is transmitted.

4. How are messages transmitted by wireless?

Discuss:

How electric energy is transmitted—primary and secondary circuits. Hook ups for laboratory—a laboratory bell and buzzer operated.

5. How do radio receiving sets work?

- a. A very simple set may be made in laboratory for receiving code.
- b. Operation of a vacuum tube set.

OUTLINE

OF

READING

READING—Seventh and Eighth Grades

Objectives: By the end of the sixth grade the majority of pupils have acquired the mechanics of reading. The rate of silent reading should continue to increase as the pupil improves his methods, and the number of reactions to a given word or phrase should increase as the reading becomes more extensive. Remedial work must be continued in many cases; bad habits must be corrected and good habits be better established. The problem now is to develop the reading ability of each pupil at his own level and in his own field; not so much *how* but *what* to read.

The field to be chosen is a matter of individual differences but within that field there should be an effort to guide the selection so that high standards may be developed and a sense of discrimination between the good and the bad in literature may be built up. One purpose of reading in the upper grades is to continue the habits of effective study but the chief purpose is to develop permanent reading interests through the enjoyment of good literature.

Method: Reading in the upper grades should be *very extensive*; all fields of facts and fiction should be touched. The material selected should be of such a nature as to develop an interest in real life. Vivid realism in unfamiliar fields will meet the demand for both truth and romance. Oral reading should be continued that there may be discussion and exchange of opinions and ideals but the greater part will be silent. Oral reports of reading that has been done will serve three purposes—(1) the teacher has an opportunity to check the amount of comprehension; (2) the pupil will have some training in standing before a group and expressing an opinion; (3) the report may interest others in the same field.

Remedial Work in Reading

The chief defects of reading are found in speed comprehension, and oral reading. Occasionally conditions are found under which the child is seemingly unable to learn to read. Some of these defects and a few suggested remedies follow:

- I. Speed—Speed in itself is not a main objective but, in general, the rapid reader is the good reader. Comprehension must of course be proportionate to the speed.

- A. Defect:** Slow rate in silent reading due to a short eye span.

Remedy:

1. If possible find out if there is a physical defect.
2. Present new words in phrases, thus forcing the eye to reach farther.
3. Short exposure of flash cards under time limit.
4. Reading of much easy material.

- B. Defect:** Slow rate in silent reading due to lip movement

Remedy:

1. Make child conscious of movement.
2. Encourage much silent reading.

- C. Defect:** Slow rate in silent reading due to following the line with the finger.

Remedy:

Give the child a strip of paper to be held under the whole line to be read. The device can be dropped in a few weeks.

- D. Defect:** Slow rate in silent reading due to inability to recognize words.

Remedy:

1. Drill on words that occur frequently.
2. Encourage the child to think of the *sense* of the material.
3. Encourage the child to get new words through phonics.

- E. Defect:** Habitual dependence on others to supply words, due to too much help from parents and teachers.

Remedy:

1. Make child aware of dependence.
2. Help him to become independent thru use of phonics and the dictionary.

II. Comprehension:

- A. Defect:** Poor comprehension due to meager vocabulary.

Remedy:

1. Give much easy reading.
2. Act the meaning of the word or phrase.

3. Enlarge the vocabulary.
4. Broaden the experience of the children thru picture study, walks, etc.
5. Search the child's experience.

B. Defect: Inability to give correct answers to specific questions.

Remedy:

1. Tests requiring "yes" and "no" answers.
2. Questions asked by teacher, and pupils find the answers in the exact words of the book.
3. Pupils prepare questions and judge replies.

C. Defect: Little comprehension by a fluent oral reader of what is read silently.

Remedy:

1. Reading of easy material below the child's grade emphasizing meaning of words rather than pronunciation.
2. Read paragraph silently; reproduce; answer specific questions on content.

III. Oral Reading:

A. Defect: Too low or too high voice.

Remedy:

1. Stand in such a position (close by, or far away) that the child will be induced to read in the correct tone.
2. Give the child an opportunity to read those parts that will train him to read more loudly or softly as need be.

B. Defect: Mispronunciation due to physical defect, carelessness, bad example in the home or school.

Remedy:

1. Encourage the child to *think* correct pronunciation before speaking the word.
2. Show the child how to speak these words correctly—position of lips, tongue, etc.
3. See that the child has a correct model.

C. Defect: Insertions, omissions.

Remedy:

1. If due to eyesight, have pupil consult specialist.
2. Call attention to errors.

- D. Defect:** Breaking up sentences without due regard to proper word grouping because of inability to recognize thought units.

Remedy:

1. Train in phrasing.
2. Study the grouping of words according to thought relationships.
3. Older pupils should notice grammatical structures that aid in grouping.

IV. Seeming Inability:

- A. Defect:** Discouragement due to

1. Inadequate satisfaction.
2. Consciousness of deficiency.
3. Wrong classification.

Remedy: Prevent discouragement by

1. Giving beneficial help.
2. Pointing to evidence of improvement and success.
3. Reclassification.

- B. Defect:** Emotional disturbances caused by

1. Antagonistic attitudes.
2. Worry.

Remedy:

1. Give constructive criticism. Be helpful.
2. See that the work is adapted to the pupil. Work must not be too hard.
3. Do not force a child to work when under emotional stress. Prevent the emotion.

- C. Defect:** Physical conditions that retard pupil:

1. Fatigue, illness, under-nourishment.
2. Defective vision—eye strain.
3. Defective hearing.

Remedy:

1. Not within the province of the teacher but examination by specialist should be recommended to parents.
2. Seat the pupil so as to give him the advantage he needs.

The Library

The library should be the center of the school; it should be intimately associated with every subject. A friendly feeling toward books should be developed and the child should turn to them for information and pleasure.

An ideal location for the library would be in a small reading room just off the classroom. It should be furnished with tables and chairs and a home-like atmosphere given that will offer a contrast to the business atmosphere of the classroom. One or two of the older students can be trained to give help in reference work so that there will always be some one in charge.

In one-room rural schools a separate room is impossible but much the same effect can be obtained by placing the books on shelves in the rear of the room and supplying suitable tables at which pupils may work.

Not the *number of volumes* in the library but the selection and *availability of the material* determine its use. A title card and an author card should be made for each book. The correct size and form for these follows:

Plum tree.

813.49

P 541 p

PHILLIPS, D. G.

Sample title card

SCHNEIDER, Albert (1863-)

543

Sch 5

Bacteriological methods in food and drugs
laboratories. 228 p. il. 8 in.

Phila. Blakiston. c1915.

Sample author card.

The books may be classified according to the Dewy decimal system or some simpler scheme may be adopted.

All children should be trained in the care and use of books on such points as:

- I. Clean hands—that books may not be unduly soiled.
- II. Care not to deface books by turning down corners of the page or leaving pencil or ink marks.
- III. Preservation of bindings:
 1. Pencils left between the pages break the backs.
 2. Books left open and face down.
 3. Forcing into tight places on shelves.
 4. Exposure to extremes of heat and moisture.

The children should be trained in the use of card index and should have free access to it. A knowledge of how to use a library should be a part of the education of every child.

A simple charging system is that of placing a card carrying the title and number of a book in a pocket pasted in the back. When the book is taken out the name of the pupil and the date the book is due are put on the card. Then the card is filed. When the book is returned the card is again placed in the pocket.

In selecting books the teacher may be guided by the list recommended by the State Reading Circle Board. School boards should be urged to spend each year the appropriation provided by law for this purpose. Consideration should also be given to the local interests and occupations of the community. Pupils should be consulted regarding their interests and books ordered to meet their needs. Books suitable for all the different grades should be included.

Seventh Grade List

- *Twain—Adventures of Tom Sawyer.
- *Alcott—Little Women. ✓
- *Dodge—Hans Brinker.
- Twain—Huckleberry Finn. ✓
- London—Call of the Wild. ✓
- *Stevenson—Treasure Island. ✓
- Burnett—Little Lord Fauntleroy.
- Alcott—Little Men. ✓
- *Stevenson—Kidnapped. ✓
- *Aldrich—Story of a Bad Boy.

- Burnett—Sara Crewe.
Burnett—Secret Garden.
*Eggleston—Hoosier School Boy. ✓
*Wyess—Swiss Family Robinson.
Montgomery—Anne of Green Gables. ✓
Rice—Mrs. Wiggs of the Cabbage Patch. ✓
Wiggin—Rebecca of Sunnybrook Farm. ✓
Rankin—Dandelion Cottage.
Alcott—Old Fashioned Girl. ✓
*Seton—Biography of a Grizzly.
Canfield—Understood Betsy. ✓
Stowe—Uncle Tom's Cabin. ✓
Alcott—Eight Cousins. ✓
Alcott—Jack and Jill. ✓
*Dix—Merrylips.
Tarkington—Penrod and Sam. ✓
Seaman—Sapphire Signet.
Alcott—Under the Lilacs. ✓
Altsheler—Young Trailers.
Webster—Daddy Long Legs. ✓

Eighth Grade List

- Tarkington—Penrod. ✓
*Twain—Prince and the Pauper. ✓
*Seton—Wild Animals I have Known.
*Scott—Ivanhoe. ✓
*Bennett—Master Skylark.
✓ London—White Fang. ✓
*Stevenson—Black Arrow.
*Kipling—Captains Courageous. ✓
*Pyle—Men of Iron.
*Dumas—Three Musketeers.
Verne—Twenty Thousand Leagues Under the Sea.
*Cooper—Last of the Mohicans. ✓
Alcott—Jo's Boys. ✓
Fox—Little Shepherd of Kingdom Come. ✓
Knipe—Lucky Sixpence.
Grey—Wildfire. ✓
Barbour—Crimson Sweater.
Singmaster—Emmeline.
Webster—Just Patty. ✓
Dickens—Oliver Twist. ✓

- ✓ Webster—When Patty Went to College. ✓
Eggleston—Hoosier Schoolmaster. ✓
Grey—Young Pitcher.
*Muir—Stickeen.
Montgomery—Anne of Avonlea.
Terhune—Lad, a Dog.
*Dickens—David Copperfield. ✓
Quirk—Baby Elton, Quarterback.
Alcott—Rose in Bloom. ✓
Carruth—Track's End.
✓ Keller—Story of My Life. ✓

Ninth Grade List

- *Masfield—Jim Davis.
Dumas—Three Musketeers.
Ford—Janice Meredith.
Tarkington—Seventeen. ✓
Doyle—Adventures of Sherlock Holmes.
*Dana—Two Years Before the Mast.
*Ollivant—Bob, Son of Battle.
Knipe—Continental Dollar.
*Blackmore—Lorna Doone.
Verne—Mysterious Island.
*Dickens—Tale of Two Cities. ✓
*Jackson—Ramona.
Wallace—Ben Hur. ✓
Twain—Connecticut Yankee in King Arthur's Court. ✓
Terhune—Buff, a Collie.
Sabatini—Captain Blood.
*Eliot—Silas Marner. ✓
Knipe—Dianthas Quest.
Wister—Virginian.
Hagedorn—Boy's Life of Theodore Roosevelt.
DuBois—White Fire.
Beard—Black Wolf Pack.
Gollomb—That Year at Lincoln High.
Davis—Bar Sinister.
*Seton—Lives of the Hunted.
*Kingsley—Westward Ho!
Sabin—Gold Seekers of '49.
Price—Blue Magic.

OUTLINE
OF
AGRICULTURE

AN OUTLINE FOR THE TEACHING OF AGRICULTURE

I. Introduction:

A. Aim of Education:

1. The chief aim of education is to teach pupils to do better the desirable things that they will do anyhow. This is interpreted to mean both those desirable present activities and assured future needs.

B. Specific aims of the course:

Agriculture has many educational values which warrant its place in the curriculum of our schools. From the cultural standpoint it is rich in knowledge, which should constitute the common possession of every educated person because of the direct bearing of this knowledge to present and future life activities of all the students. Secondly, it carries very strong prevocational values which offer excellent opportunities for prevocational experiences of the most realistic sort and which can be readily gained in almost any situation. Then, too, unlike most subjects, the cultural values can easily be developed through the prevocational experiences whenever a conscientious effort is made to do so. In this way, the subject can be vitalized, filled with action, correlated with other subjects, and readily made the most interesting and instructive subject in the school curriculum.

C. Outstanding features of content:

Nothing will more effectively destroy the pupils' interest in agriculture than the common question and answer method continually based on "so many pages in a text book." In the exclusive use of this method, little real teaching is done and whatever efforts are made, are merely to find out how well the pupils have memorized the assignment. Such recitations destroy all originality, curiosity and spontaneity that pupils may possess, and the children who are naturally investigators, become in the end, passive recipients of prescribed orthodox information that bears little, or generally, no relation whatever, to their present or future life's activities. In following such a procedure the only difference between the students and the teachers is the fact that the teacher has the book open. Each member of the class should have a text book in elementary agriculture, but the text

should merely be regarded as a ready source of information needed to accomplish the specific tasks designated in the lessons.

2. New content added and why:

Since the child should be taught in terms of real life situations, it seems evident that the farming enterprises of the community in which agriculture is being taught, should be used as a basis for instruction in agriculture. This means that the content of courses in agriculture should be derived from the activities involved in the local farming enterprises and that the tasks of the farmers in conducting these activities, and that the tasks of the students themselves, involved in conducting their agricultural club work and other junior project activities, should become the sources of topics and problems for classroom discussion, that is lesson, for the class in agriculture. Whatever principles or technical agricultural knowledge a teacher thinks a class needs to understand must, therefore, in some way, have a use in the activities of the farming enterprises of the local community and these should be outgrowths of these activities, otherwise a teacher is not justified in teaching them. In following this procedure, knowledge is sought because there is a need for it. It has a value in helping to solve real life problems, and is not taught for mere memory's sake.

D. General Methods of Teaching Which Apply to the Course as a Whole:

Seventh and eighth grades should be combined for the study of agriculture. In order to avoid repetition, one year should be devoted to plant studies and one to animal studies. This scheme of combining classes and of alternating subjects permits a teacher who has but one section in agriculture to give a two year course of instruction. Worth while topics or problems pertaining to the activities in the local farming enterprises and in the club and junior project work of the members of the class should become the lessons and the socialized recitation. The project method, and the laboratory method, should prevail as the typical classroom procedure. A seasonal sequence should be observed in the presentation of all the lessons. The time to teach a lesson is when the activity is going on or about to be taken up in the community. In this way, the subject can be motivated and vitalized be-

cause the materials are at hand and the activity is in progress.

E. Time schedule per day or week:

No definite recommendations are made and the matter of time schedule is left entirely in the hands of superintendents and teachers.

F. Monthly Outline of Material to be Covered.

A seasonal sequence in teaching agriculture can be observed if the work is put on a monthly basis, and topics or problems fitted for a particular month are designed to be taught in that month. This means that in each year's work in agriculture, the teacher should decide upon the lessons to be taught in September, October, November, etc., throughout the school year. The suggestive outline of a two years' course in elementary agriculture given below carries out this idea.

II. Content, or Content and Method.

A suggestive outline for a two years' course in agriculture arranged on a monthly basis is here included to guide teachers in making their own specific outlines adapted to their classes and to their community.

SEPTEMBER

Plant Studies

1. Study of Plant Classification.
2. Study of Fall Weeds.
3. Study of Potato Plants.
4. Study Parts of a Plant and Make Drawings
5. Select Seed.
6. Community Crop Survey.

Animal Studies

1. Culling the Poultry Flock.
2. Importance of Farm Animals.
3. Kinds of Farm Animals in Community.
4. Study of Pure Bred and Scrub Animals.
5. Value of Milk and Eggs in the Family Diet.

OCTOBER

Plant Studies

1. Collecting Soil Samples.
2. Study of Common Soils.
3. Formation of Soils.
4. How Plants Feed, Grow and Reproduce.
5. Plant Insects.

Animal Studies

1. Study of Poultry Houses.
2. Winter Rations for Poultry.
3. Cost of a Ration.
4. Poultry Records and Accounts.
5. Judging Poultry.

NOVEMBER

Plant Studies

1. Study of Most Important Plants in Locality.
2. Judging Above Plants.
3. Study of Small Grains.
4. Judging Small Grains.

Animal Studies

1. Study of Animal Grown for Meat.
2. Dairy Types and Breeds.
3. Judging Above Animals.
4. Feeding Standards.
5. The Silo and Silage Crops.

DECEMBER

Plant Studies

1. Examination of Farm Seeds.
2. Physical Properties of Soil.
3. Importance of Humus and Barn-yard Manure.
4. Keeping Soils Productive.
5. Crop Rotation.

Animal Studies

1. Testing Milk.
2. Testing Skim Milk and Cream.
3. Keeping Milk Records.
4. Feeding the Boarder Cow.
5. Herd Improvement.
6. Value of Butter and Cheese.

JANUARY

Plant Studies

1. Importance of Soil Water.
2. How Soil Water Enters Plants.
3. Rise of Water in Soils.
4. How Soils Can Be Made to Hold More Water.
5. Influence of Drainage.
6. Plant Food Removed by Crops.

Animal Studies

1. Common Breeds of Farm Horses.
2. Care and Management of Horses.
3. Unsoundness of Horses.
4. Judging the Age of Horses.
5. Care of Colts.

FEBRUARY

Plant Studies

1. Conditions Essential for Good Plant Growth.
2. Action of Acids on Limestone.
3. Testing Soils for Acids and Alkali.
4. Study of Molds and Other Fungus Diseases.
5. Study of a Seed Catalogue.
6. Method of Raising Vegetables and Flower Seedings in Boxes.

Animal Studies

1. Selecting Breeding Fowls.
2. Care and Management of Flock.
3. Control of Lice and Mites.
4. Care of Young Chicks.
5. Incubation.

MARCH

Plant Studies

1. Planting the Home Garden.
2. Making Out a Seed Order.
3. Testing Seeds.
4. Planting Trees and Shrubs.
5. Pruning and Grafting.

Animal Studies

1. Selection and Care of Eggs for Hatching.
2. Candling of Eggs.
3. Grading and Marketing of Eggs.
4. Types and Breeds of Swine.
5. Value and Use of Swine.

APRIL

Plant Studies

1. Forage Crops.
2. Importance of Legumes.
3. Treating Seed Potatoes.
4. Preparation of Seed Bed.
5. Improvements of Home and School Grounds.

Animal Studies

1. Brooders and Hovers.
2. Growing and Feeding Chicks.
3. Importance of Sanitary Feeding Troughs and Utensils.
4. Fattening Poultry for the Market.

MAY

Plant Studies

1. Cultivation.
2. Weed Control.
3. Common Spring Weeds.
4. Transplanting.
5. Study of Few Common Flowers.

Animal Studies

1. Farm Management.
2. Good Roads.
3. Social Conditions.

OUTLINE
OF
HOME ECONOMICS

HOME ECONOMICS

Introduction:

A general aim of education is to enable one "to understand surrounding conditions, to build up habits of conduct and tendencies to behavior such as shall meet the needs of the group."—Dewey. In the formulation of home economics courses of study for the Junior and Senior High Schools this accepted general aim of education has supplied the controlling ideals.

Definition of what is understood to be an ideal home, and of what is home economics must be accepted as a preliminary. There must be also, an interpretation of the terms vocational and cultural, as employed in this presentation.

A comprehensive statement formulated by home economists is to this effect that the "ideal home" is

Economically sound.

Mechanically convenient.

Physically healthful.

Morally wholesome.

Artistically satisfying.

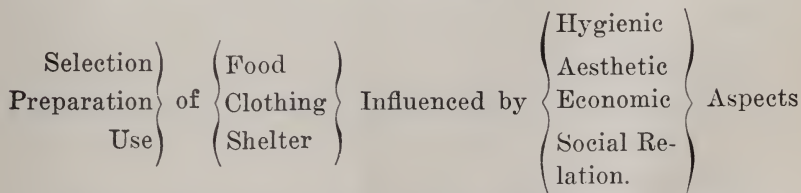
Mentally stimulating.

Socially responsible.

Spiritually inspiring.

Founded upon mutual affection and respect.

It then follows that home economics is that subject of instruction in which the emphasis is placed on those phases of home life that relate to health, beauty, economy and social relations. This may be expressed graphically.



Worthy exponents of home economics see in home making much more than the mere processes of cooking and sewing. Viewed from the broader outlook it is a vocation that should attract the highest type of mentality and personality. The term vocational training designates preparation for "any form of continuous activity which renders service to others," whether it be for the

teaching of any subject in the curriculum, whether for home making, or for any other activity.

For home economics there may be cultural as well as vocational associations. If the subject is so taught there follow higher ideals, and larger appreciations, there follow also refinements of mind and morals.

DISTRIBUTION OF COURSES

Junior High School

Seventh Grade

Required :

Foods :

Minimum—two fifty-minute periods a week, first semester.

Clothing :

Minimum—two fifty-minute periods a week, second semester.

Eight Grade

House Management :

Minimum—two fifty-minute periods, first semester.

The House Beautiful :

Minimum—two fifty-minute periods, second semester.

Senior High School

Eleventh Grade

Elective :

Advanced Foods :

One-half unit. One double period daily through first semester.

Advanced Clothing :

One-half unit. One double period daily through second semester.

Twelfth Grade

The Home :

One unit. Single period daily throughout the year.

FOODS

Seventh Grade. Required. Minimum two fifty-minute periods a week, first semester.

I. Objectives:

1. To meet the immediate health needs of the girl herself.
2. To aid the girl in becoming a better helper to her mother through
 - a. The study of food in relation to family health.
 - b. The study of relative values applied in selection and preparation of different types of foods.
 - c. Learning to work efficiently.
 - d. Personal interest in the attractiveness of table service
 - e. The formation of food standards and habits.
3. To cultivate justifiable pride in achievement.
4. To provide for training in team work through classroom activities.

II. Outline of Course

Topic	Procedure and Subject Matter	Home Activities	Remarks
Analysis of the situation.	Discuss home experiences and needs as an aid to developing accompanying home practice work. Determine uniforms.	Talk over plans at home and bring in suggestions from mothers as to what might be included in home practice of course.	Work out a home practice chart for keeping records.
Health Inventory.	Weigh and measure students. Study health habits contributing to good nutrition. Study food habits necessary for health. Use Health Score cards.	Begin keeping growth and health records.	If there are no scales at school, have weights taken outside. Discuss food habits of class members. Plan to check up growth and health records every two weeks.
Starting the day right—Breakfast.	Need for regular breakfast hour. Simple guides to food selection.	Form habits of eating regular, wholesome breakfasts.	Find greatest need among children, and seek to bring about improvements.
Survey of laboratory and equipment. System and management. Measurements.	Explanation, arrangement and use of equipment. Housekeeping plan. Stress habit formation. Demonstration of measurements.	Make like survey at home.	Show that keeping equipment in definite places makes work easier.
Use of raw fruits. Review of food values.	Value and place of raw fruits in the diet. Discuss choice and purchase. Demonstration of attractive ways of serving.	Find out what fruits are grown in Colorado. Buy fruits for home table. Report.	

Use of cooked fruits.	Make apple sauce. Bake apples.	Prepare in larger amount.	Find out what home grown varieties are especially good for each purpose.
Use of cereals. Value of roughage in foods. Use of milk.	Cereals, kinds, purchase, use. Value of whole grains. Cooking and serving. Use of bran. Food value of milk; ways in which milk can be used. Rules for milk drinking.	Cook cereal at home. Report on kind used, amount, and how served. Find out how much milk is used at home daily. In what ways?	Advise use of longer cooked cereals, also of whole grains and use of bran stirred into mush before removing from fire.
Toast. Cocoa versus coffee.	Prepare toast. Objections to coffee drinking habit. Make cocoa.	Make cocoa and toast for breakfast.	Show pictures of children and of animals on milk-containing diets versus diets without milk.
Planning a breakfast. Table setting and manners.	Plan amounts and system of work. Demonstration of table setting. Discussion of table manners.	Set table for home breakfasts.	Keep time record and see gain in attractiveness, exactness, and step-saving in the home work.
Serving a simple breakfast.	Serving the breakfast.	Prepare home breakfast on Sunday.	Stress attractiveness.
Checking up on breakfast.	Discuss results—food, service, work habits, count cost.	Prepare several home breakfasts.	
Check on orderly laboratory habits. Brief test.			
Luncheons or suppers.	Discuss luncheons and suppers that supplement the types of breakfasts previously.		In considering use of butter, not that when butter is ex-

Topic	Procedure and Subject Matter	Home Activities	Remarks
	ously considered. Consider the day as a unit.		pensive, plenty of whole milk with green leafy vegetables with butter substitutes may be used.
Raw vegetables. Use of raw vegetables in salads.	Food value of raw vegetables. Consider kinds. Serve lettuce, cabbage, etc., with simple uncooked dressings, as French, vinegar, sour cream or bacon fat.	Find what vegetables are grown at home, in community, in state. Put away some vegetables. Report.	Burying in a shallow trench has excellent possibilities, straw being used to help prevent freezing.
Storage of raw vegetables. Freshening raw vegetables.	Consider possibilities of Colorado-grown vegetables. Methods of storage. Freshen wilted vegetables.	Prepare salads at home. Report on kind of vegetable used.	For demonstration of freshening vegetables, cut wilted carrot in two; place one half in water, leaving other outside. Compare next day.
Cooked vegetables.	Rules for vegetable cookery. Prepare buttered carrots, turnips, etc. Value of cooked vegetables as compared with raw.	Learn varieties of home grown vegetables suitable to various purposes. Learn keeping qualities of each.	
Creamed vegetables. Creamed soups.	Ways of making cooked vegetables palatable. Making and uses of white sauce. Value of cream soups as way of getting milk into diet. Prepare cream soups, creamed and scalloped vegetables.	Repeat work at home. Report on kinds of vegetables used, amounts prepared, etc.	
Use of potatoes.	Value of alkaline-yielding ash. Lack of vitamins and of bulk as compared with green vegetables. Avoidance of two	Find out where potatoes are grown, kinds, keeping qualities, how sold, cooking quali-	Emphasize service, as splitting open baked potato immediately after removal from

starchy vegetables at one meal. Bake, boil and stuff potatoes.	ties and price. Cook potatoes, especially baked potatoes, at home.	oven. Give good standard for well baked, mealy potato.
good value and place of eggs in the diet. Poach eggs and prepare soft cooked eggs.	Find cost and seasonal variation in price of eggs. Cook eggs at home. Report.	Discuss cookery of hard cooked eggs.
Eggs.		
Reasons for avoiding heavy desserts. Make junkets, soft and baked custards.	Prepare custards at home.	Why does a custard curdle? What produces a watery baked custard?
Egg and milk mixtures and junkets.		
What makes muffin mixture light? Make muffins, preferably whole wheat and white flour mixed, or with some bran in batter. How an oven heats. Regulation of oven. Standards for muffins.	Prepare muffins for family at home.	Take into consideration the kinds of stoves and fuel used in community.
Quick breads—muffins. Regulation of oven.		
Baking powder biscuits.	Repeat at home. Report.	Discuss frequent use of hot breads. Importance of thorough baking and also of thorough mastication. Standard crustiness.
Place of meat in the diet. Cost of meat. Care of fresh meat. Tough and tender meat and ways of cooking. Pan broiled steak or Swiss steak.	Cook some meats at home. Report. Notice meats used at home. How cooked?	Note that tough meats are best cooked by moist heat. tender meats only by dry heat.
Meat.		
Tough and tender meats as related to location of cuts. Buying of meats. Preparation of pot roast.	Buy meats for home use.	Relate toughness to cause and then to certain parts of animal's body.
Meat (Continued).		

Topic	Procedure and Subject Matter	Home Activities	Remarks
Thanksgiving lesson.	Cranberry sauce and jellied cranberries or simple steamed graham pudding and sauce.	Students may bring cranberries from home to prepare as part of the home dinner. Help plan for the decoration and attractive service of the Thanksgiving table.	Plan to save time and work. Use table coverings easily laundered and so more likely to be kept clean.
Plan luncheon.	Discuss menus, good and bad. Plan luncheon to be served. Plan amounts, market lists, costs, schedule of work and service.	Prepare a Saturday luncheon or supper.	Stress attractiveness.
Serving a simple luncheon.	Prepare and serve luncheon. Observe work habits.	Prepare other meals at home. Report.	Check up on day's meal plans to see if there is sufficient fruit, vegetable, milk, not too much meat, etc.
Discussion of dinners.	Discuss dinners appropriate to breakfast, and luncheon plans previously considered.	Make simple sweets or popcorn balls for home trees.	Consider use of sugar in diet. Urge use of simple sweets.
Christmas lesson.	Make gift boxes of home made cookies, stuffed dates, or other wholesome sweets.	Prepare lunches for self and other members of family.	Value of one hot dish if it can be prepared.
Planning and preparing the school lunch.	Plan well balanced lunches. Fill several boxes with different types of lunches, food prepared by class.	Find how much the baby at home weighs, what food he has, how much he sleeps.	Special emphasis, at this age, on what not to feed as well as on what to feed.
Feeding the baby.	List foods to avoid as dangers and why. Foods which make baby grow. How much? The first foods, other than milk, and when and how they should be given.	Help look after baby's food at home.	

- Check up on growth and health records.
- Those who have not been very successful may try to bring up weights by end of year, and make a new set of health habit records. Some may try to keep records for younger members of family for remainder of year.
- Make final summary of records, with final rewards, as of stars, and special commendations. Have growth curves for best records, if not for all, and discuss best cases, including reports by these children as to their keeping of health habits.
- Extend invitations to mother.
- May make this part of a Parent-Teachers meeting. Give a chance for children to manage part.
- Plans and preparation for party to be given for mothers.
- How help mother entertain if she has company?
- Entertain mothers.
- Entertain mothers.
- Practical quiz on cookery and housewifery.
- By choosing from slips of paper with assignments on them, prepare various dishes made during the semester. Observation of habits and standards of housewifery while putting laboratory into good condition.

III. Bibliography

Author	Title	Publisher	Date	Price
Wellman, Mabel T.	Food Planning and Preparation	Lippincott, Philadelphia.....	1923	\$2.00
Mathews, Mary L.	Elements of Home Economics, Part II.....	Little, Brown & Co., Boston.	1921	1.40
Bailey, Pearl L.	Domestic Science Principles and Applications		1914	
			1919	
	(Revised)	Webb Pub. Co., St. Paul.....	1921	1.10
Winchell, Florence.	Food Facts for Every Day.	Lippincott, Philadelphia.....	1924	1.00
Greer, Charlotte N.	School and Home Cooking..	Allyn & Bacon, Chicago.....	1920	1.70
Cooley & Spohr.	Household Arts for Home and School, Vol. 1.....	Macmillan Co., Chicago.....	1920	1.30
Williams & Fisher.	Elements of the Theory and Practice of Cookery. Rev. Edition.....	Macmillan Co., Chicago.....	1920	1.00
Matteson and Newland	Lab. Manual for Foods and Cookery		1916	1.50
		Macmillan Co., Chicago.....	1921	2.00
Frich, Lilla A.....	Basic Principles of Domestic Science.....			
Willard & Gillett..	Dietetics for Home and School	Macmillan Co., Chicago.....	1922	1.40
Carolyn Hoefer ...	Methods of Health Instruction in the Elementary School	Elizabeth McCormick Memorial Fund, 848 North Dearborn Street, Chicago.....	1922	.25
Sherborn and others	Health of the Family.....	Federal Board for Vocational Education, Washington, D. C.	1923	.25

Clothing

Seventh Grade. Required. Minimum—two fifty-minute periods a week, second semester.

I. Objectives:

1. To help the girl gain an understanding of the social, economic, health and personality values of suitable clothing.
 - a. Underwear.
 - b. Top clothing.
 - c. Accessories.
2. To give a background for the development of judgment in the selection of clothing.
 - a. Fitness:
 - (1) To person (as line, color, fabric).
 - (2) To occasion.
 - (3) To age.
 - (4) To climate or weather.
 - (5) To income or position.
 - b. Durability.
 - c. Cost:
 - (1) First cost.
 - (2) Upkeep or care.
3. To give a certain control over manipulative processes involved in garment construction.
 - a. By supervised use of sewing equipment.
 - b. By construction or adaptation of simple patterns to the problem in hand.
 - c. By correct construction of a simple garment.
 - d. By proper care, and renovation of materials.
4. To lead the girl to help her mother by the repair and care of her own clothing.
5. To learn to make simple but useful articles for gifts.

II. Outline of Course in Seventh Grade Clothing.

Topic	Procedure and Subject Matter	Home Activities	Remarks
Analysis of situation. Survey of equipment.	Child's view of a desirable outfit. This list is posted. Display of pictures of attractive dresses and underwear.	Are clothes made at home? Who does it? Is it hard work? Do you help? How? Social aspects. Useful aspects of clothing. Suitability.	Current patterns and other suggestive pictures appropriate to needs available.
Attractive clothes.	What makes clothes attractive. The lines, the color, the fabric, the care they get. The way they are put on.	Do all members of the family dress alike? Do some colors look better than others on people you know? Why? Uses, season, age may be the "why."	Color circle is posted. Combination of colors are displayed. Samples of good design shown.
The cost.	Do we get our clothes for the asking? Who pays? What part of the income do clothes require? Budgets worked on.	Is there such a thing as limitless means? Ask father if Uncle Sam has a budget and what it is. Has the family a plan for spending?	List budget plans for moderate incomes, showing relative allowances.
Measure taking.	Demonstration of simple measure taking using two types of people. Let students cut simple kimono patterns.	Newspapers brought from home. A tape and a yardstick enable one to cut most patterns. Bring such plain patterns as used at home to school.	Display simple kimono pattern both commercial and home-made. Estimates of goods and cost are put on the board.

Materials.	Extra goods offered for successful buying after lesson on cotton and plain.	Samples of various cotton fabrics brought from home afford means of learning textures.	Directions for shrinking goods at home after it is bought is left on board.
Cutting garment.	The tested pattern laid on goods correctly and dress cut. Patterns folded and put away. Goods folded and put away.	Do all clothes fit nicely? Causes, talk over at home. Pieces brought from home for practice work.	Kinds of scissors and best types of tapes, pins, needles, etc., shown.
Pinning and basting seams.	Pinning seams at right angles to edge, being careful to bias and curved edges—not to stretch. Demonstration and use basting.	Girls say: "Mother never bastes." She did until she was more experienced than you are.	Use of cushion in caring for pins and needles. Use of box for storage for work. Clean hands.
Fitting and adjusting.	Trying on garment. Demonstrating. Errors and adjusting.	The freedom of movement necessary for a growing girl is the standard set for the child's and mother's consideration.	The chance to judge a girl's home conditions is found in fitting her.
Stitching seams.	The sewing machine demonstrated and used on scraps, then on seams.	Machines at home should be cleaned and used by girls as a home project. Mother's co-operation necessary.	The work well begun, can be completed at home.
Completing seams.	Care of machines and of work. Management.	Contrast the well kept auto and the poorly kept. Keep machine oiled and clean.	

Topic	Procedure and Subject Matter	Home Activities	Remarks
Finishes for curved edges. Cutting biases.	The mathematical lesson on the true bias, which is the diagonal of a rectangle formed by folding warp on woof.	Biases joined at home and brought ready for next step in work.	Display of fringe, scallops, hems, facings, etc., made.
Test on work covered.	Completion test on steps that have gone before.	Observe at home finishes of edges so as to report on same next day. Look up clean hose to darn in a few days.	
Finishing edges.	Kinds of finishes suitable for various uses. Practical demonstration of same.	A gown may be made at home by kimono or set-in sleeve pattern, using three flour sacks.	Finished gown made by teacher will be a great help here. Or a sketch or pattern.
Finding length. Turning hem. Gathering.	Hang garment on child. Have other student measure from floor to shortest point on skirt all around. Turn hem accordingly, baste, gather, baste.	One sack is cut to form yoke and sleeve and one each is used as front and back of gown.	A pattern on gown made of sacks can be cut before.
Sewing hem.	Stitch hem and press. Remove bastings. Design ornamentation.	Fancy stitches make this attractive.	
Ornamental stitches.	Where goods is plain contrasting stitches as lazy daisy, chain stitch used.	Shirts to be darned. Shirts to be cleaned. Collect as problems.	A sample collection of ornamental stitches displayed or demonstrated.
Laundry work. Renovation work.	Correct laundering of specific garment. Weaving reviewed and applied in darning.	Study of soaps in connection with fading or damage to goods. Effect of hot iron.	Laundry manual. Laundry prices.

Renovation.	Renovation problems brought from home are taught to all.	Pride in neatness is encouraged by giving a girl a place to keep her things.	Cost of dry cleaning.
Bloomer pattern.	A good pattern is tested and adapted to specific needs.	The pattern used at home is brought. As a child grows this is altered.	
The material.	The bloomers made to match dress or of woolen material for athletics. A choice cost estimated.	If goods is at home or in some skirt that can be ripped and cleaned at home, this saves buying.	Pictures of bloomers shown.
The cutting.	The tested pattern is pinned on goods--seams allowed and cutting done. Pattern explained.	Seams in dresses and underwear compared at home. Questions asked.	
Seams.	Flat-fell seams are used. These are demonstrated.	Seams completed at home.	Illustration of seams.
Casings. Elastics.	Double bands or casings to carry elastic are estimated and applied.	Elastics adjusted at home.	Samples of elastic.
Test on all preceding work.	This test may be true-false or completion, and covers all points so far in work.		
Hygiene of clothing.	Necessity for clean, porous, light, free clothes. Warmth without friction.	A clean body and clean clothes worth working hard for.	Assignments of reading.
Economy of clothing.	A stitch in time. A dollar saved is a dollar made. Wise buying saves crying. Service not in fads. Conservative.	"Fair play" at home should be the motto.	Readings.

Topic	Procedure and Subject Matter	Home Activities	Remarks
Shoes and hose.	Display of both value, size, cost, upkeep.	Cost and value of a shoe shine. Laundering hose; wearing hose.	Assignments.
Care of both.	Importance of care of feet—care of the hose and shoes.	Patching, darning seaming hose.	Directions for care on board. Success and neatness.
Shoe or clothes bag designed.	Abuse to shoes, hose and soiled clothes in many homes. Precautions. Use of baskets, bags, paper bags.	Choice of suitable fabric or some garment from which bag may be made. Preference given.	Economy in caring for clothes demonstrated by shoe repair or rubbers.
Bag cut and basted.	The bag is often cut to fit available goods. The ornament is determined by the material.	A shoe bag to hang on the closet door is a help at home.	
Bag sewed.	Lapped seams may be taught. Blanket stitch. Rings used as holder.	A laundry bag is a necessity. Where small pieces are used to make bag, the piecings can be used as places to ornament.	
Bag ornamented.	Work completed.	Simple bright stitches in contrast to very plain goods is attractive.	
Bag pressed. Oral review.	Work neatly cared for. Questions on principles taught.		
Test on all work.	True-false test on all the work. Average of three grades taken.		
Arranging laboratory discussion of home work.	The collection of equipment—cleaning machines, oiling and setting desks in order. Oral discussion of possible home work.		

III. Bibliography

Author	Title	Publisher	Date	Price
Mathews, Mary L.	Elements of Home Economics, Part I.	Little, Brown & Co., Boston	1921	\$1.40
Cook, Rosamond	Essentials of Sewing	Manual Arts Press, Peoria, Ill.	1923	1.40
Cook, Rosamond	Sewing Machines	Manual Arts Press, Peoria, Ill.	1923	1.25
Cooley & Spohr	Household Arts for Home and School, Vol. II.	Macmillan Co., Chicago	1920	1.30
Woolman, Mary S.	Clothing, Choice, Care and Cost	Whitcomb & Barrows, Boston	1920	2.00
Kinne & Cooley	Clothing and Health	Macmillan Co., Chicago	1916	1.10
Dyer, Elizabeth	Textile Fabrics	Houghton, Mifflin Co., New York	1923	1.75
McCowan & Waite	Textiles and Clothing	The Macmillan Co., Chicago		1.35
Butterick, Helen G.	Principles of Clothing Selection	The Macmillan Co., Chicago	1923	1.25
Denny, Grace L.	Fabrics and How to Know Them	Lippincott, Philadelphia	1923	1.50

House Management

Eighth Grade. Required. Minimum two fifty-minute periods a week, first semester.

I. Objectives:

1. To develop the girl's interest in her present home.
 - a. By an analysis of its common problems of shelter, food, clothing, recreation, advancement and child life.
 - b. By participation in home activities, social and routine.
2. To set up standards of right habits of living.
3. To develop an appreciation of fine personal home life.

II. Outline of Course in Management of Household Operations, Finance and Health

Topics	Procedure and Subject Matter	Home Activities	Remarks
Divisions of the house. Kitchen as a unit of study of the work part. Six lessons.	Rest, pleasure and work parts of house. Plans for a labor-saving kitchen. Routing of lines of work. Built-in conveniences. Equipment and labor-saving appliances. <ol style="list-style-type: none"> Permanent equipment. Small equipment. How to choose. Care, cost. 	Sketch route of work in home kitchen. Note good points in home kitchen, arrangement. Make possible improvements.	May be conducted in connection with an older woman's kitchen contest.
Cleaning. Four lessons.	Tools and materials. Cleaning a room. <ol style="list-style-type: none"> Daily care. Weekly. Preparation. Steps. Cleaning and polishing furniture. Substances to be used, substances to be avoided. Cleaning of metals. Cleaning of floors and woodwork. Cleaning and care of tools. <ol style="list-style-type: none"> Vacuum cleaners. Roller sweepers. O'Cedar mops. Cleaning cloths. 	Daily care of rooms for one week. Report. Do weekly cleaning.	Carefully kept reports as to time, methods and results are necessary to insure work being done properly.

Care of windows, closets, drawers. Two lessons.	Kitchen closets, arrangement, care, cleaning. Windows, mirrors, care and cleaning. Linen closet.	Students bring in suggestions as to efficient plans worked out at home.	Simplification of work should be constantly emphasized, yet with high standards of order and neatness.
Plumbing. Four lessons.	Construction. Care. Importance of open system. Traps. Care of fixtures—bath room. Use of cleansing agents, alkalies, disinfectants. Heights of working surfaces. a. Arrangement. b. Size. c. Care.	Trace plumbing at home—locate pipes, note kinds of traps, materials in fixtures, etc. Measure height of sink and compare with height of worker.	
Laundering. Two lessons.	Modern equipment. Methods of work.	Where possible have girls carry through a certain amount of laundry work, noting time, cost, and results with equipment used.	
Care a Junior High girl should take of her own room. Two lessons.	Ventilation. Care and making of bed. Cleaning, dusting. Arrangement, order, and care of closet and bureau drawers. Good equipment for cleaning of bedroom. Prevention and extermination of household pests.	Care and improvement of own room. Keep time records.	Emphasis on relation between girl's room and standards of personal grooming and dress. Increase feeling of pride in a well-kept, attractive room.
Business methods for the girl who goes out to earn. Budget-	Money-earning, spending, giving, saving. Income—a family		A project such as the keeping of poultry or raising of a garden offers opportunity for ex-

Topics	Procedure and Subject Matter	Home Activities	Remarks
ing her income. Eight lessons.	b. individual c. attitude toward the income. Allowances (for real needs). Responsibility. Give, save, spend. Ways of earning money. Budget for high school girl. a. differs with age b. number of expenditures expected to cover c. size of total family income and number in family. Cost of maintenance in the home. Accounts for business projects for boys and girls. Examples—garden, poultry, eggs, clothing. Estimate the value of labor. Savings and investment. Savings realized in unpaid labor of members of household.		perience in a small business enterprise, keeping account of cost of production as well as of returns. Any consideration of the student's own allowance is valuable, but requires tact in handling.
Where spending is saving, or, right use of money. Two lessons.	Where economy is false. An ounce of prevention worth a pound of cure. Giving to the right causes.		
Happiness in the home. Two lessons.	Foundation stones— 1. Co-operation. 2. Love. 3. Respect for the rights of others.		Have student decide upon one contribution toward family life which she can make. Carry out for one week.

4. Plan for spending the income wisely.
5. Good management.
6. Essentials for healthful living—
 - a. work
 - b. pleasure
 - c. exercise.
7. Thoughts for others.

Marketing thrift.
Two lessons.

System. Economy, food, shelter — fuel, light, clothing. General expenditures.

Girl may take care of food and household supplies for one week, reporting on her system and wherein she found ways of exercising economy. Girls may make a collection of ten ways in which, during one week, they have prevented wastefulness in the home.

The household and the community. Four lessons.

Community food problems. Community housekeeping.

- a. Waste disposal.
- b. Sewage.

Community cleanliness —

- a. yards
- b. alleys
- c. streets
- d. civic improvement.

Community health—

- a. preventive

A chance is here afforded to direct the interest of the mothers and fathers as well as the girls along the lines of community interest.

Topic	Procedure and Subject Matter	Home Activities	Remarks
	<ul style="list-style-type: none"> b. remedial c. constructive. Community protection— <ul style="list-style-type: none"> a. fire b. care of dependents c. prevention of accidents d. lighted streets—police. 		
Care of sick in home. First aid.	Medical clinics— <ul style="list-style-type: none"> a. hospitals b. city and county nurses. 		

III. Bibliography for House Management

Author	Title	Publisher	Cost
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Donham, A.	Spending the Family Income	Little, Brown & Co.	1.75
Taber, C. W.	Business of the Household	Lippincott	3.00
National Board of Fire Underwriters		New York	....
Abel, W. H.	Successful Family Life on a Moderate Income	Lippincott	2.00
Bacheller	Keeping Up with Lizzie	Harper	1.50
Frederick, C.	Household Engineering	Doubleday	2.00
Frederick, C.	The New Housekeeping	Doubleday	1.75
Collins, A. F.	The Amateur Mechanic	Appleton	1.50
Fales, W.	Household Dictionary	Small	1.25
Glover	Dame Courtesy's Book on Hints	McClung	1.00
Bulletin on the Home	Cornell University	Ithica, N. Y.	....
Starret, H.	The Charm of a Well Man- nered Home	Lippincott	1.50
Starret, H.	The Charm of Fine Manners	Lippincott	1.00
Smith, F.	Manners and Conduct in School and Out	Allyn and Bacon, New York	.40
	(By the Deans of Girls in Chicago High Schools.)		
American Red Cross	Home Hygiene and Care of the Sick	American Red Cross	1.60

THE HOUSE BEAUTIFUL

Eighth Grade. Required. Minimum two fifty-minute periods a week, second semester.

I. Objectives:

1. To develop an interest in discovering art principles that govern harmonious interiors and attractive settings for the house.
2. To help the student to set up standards for choice.
3. To give the incentive to hold to a high standard one's immediate environment.

II. Outline of Course Dealing with the House

Topic	Subject Matter and Procedure	Home Activities	Remarks
Shall we rent, buy, build, remodel, or simply give care to present dwelling place. Two lessons.	Sources of advice or help. If renting 1. Classified advertisements. 2. Real estate agents. 3. Records on taxes, owners, inspection, etc. 4. Old residents of the town. 5. Former occupants.	Enlist the interest of members of the family in the aspect of the problem that would especially concern the family.	Collect and file for later reference bulletins, charts that have any bearing on the topics discussed.
	If buying 1. Real estate agents. 2. Banks. 3. Loan Associations. 4. Court house records. 5. Health Bureau. 6. Local residents. 7. Town planning board.		
	If building 1. Real estate agents for lots. 2. Town planning board—map of sewers, etc. 3. Banks. 4. Building and loan association. 5. Sanitary Bureau. 6. City hall as to public utilities. 7. Building codes.		

8. Architects.
9. Contractors.
10. Fire inspectors.
11. Insurance companies.
12. Records of taxes.

The choice of a location. Two lessons.

Consideration in selection of site.

1. Soil conditions.
2. Attractiveness from standpoint of tree growth, view, immediate surroundings.
3. Accessibility to school, church, friends.
4. If in town, where zoning laws are enforced.

Field trip on which is made comparative studies of building sites.

Illustrative material to include photographs of good, especially well chosen sites in the community or in nearby towns or country community.

The selection of a house plan, or modification of a plan to suit the building site chosen. Four lessons.

Considerations in choice of plan for building or modification:

1. Suitability of plan to site and to occupants.
2. Principles of design applied in the structural features.
 - a. Relation of height to ground

Make study of home sites with a view to discovering very possible improvements.

From parents may be obtained estimates of cost of typical houses in the vicinity. These estimates place certain limitations on advices and resolutions.

Topic	Subject Matter and Procedure	Home Activities	Remarks
	<p>plan, roofs, entrances, windows, chimneys.</p> <ol style="list-style-type: none"> Choice of type. The exterior finish of the house. <p>Especial consideration of essential features of plan that are frequently omitted,</p> <ol style="list-style-type: none"> e., fireplace and adequate space for book shelves. Magazine pictures and photographs of remodeled dwellings—re-modelling not prohibitive in cost to the average home of the local community. Visit to houses in the process of construction where possible. Study of blue prints and of floor plans and elevations. 		
Making the immediate surroundings attractive. Two lessons.	<p>Attractive surroundings stimulate pride in the home. The beautifying of the home grounds is but putting into practice the golden rule—for the individual house lot is a matter of concern with the neighbor and of the country at large. The landscape plan should be suited to the particular house so that there is unity in the plan as a whole.</p> <p>Beautifying the home grounds may be accomplished by:</p> <ol style="list-style-type: none"> Preventing accumulation of trash. Orderliness in the placing and in 	<p>Possible home projects that may be offered for choice are:</p> <ol style="list-style-type: none"> Meeting the waste disposal problem. Effective use of the paint can. The reformed clothesline. The use of vines and flowers as screens. 	<p>Plans for a Saturday excursion to view the success of the projects undertaken will prove an incentive.</p>

the upkeep of such devices as garbage receptacle and clothes-line.

3. Care of the grass, shrubbery, vines and trees.
4. Use of paint.
5. Effective use of lattice fence.
6. Planning walks and drives with a view to attractiveness as well as to convenience.
7. Planting and grouping that is pleasing: vines, shrubs, trees, flowers.


Devices for effectively teaching the above are offered in texts and available illustrative material.

In earlier work in art classes were studied in an elementary fashion the emotional responses produced by light and dark and through the use of color and color combinations. Here in the study of the house will be pointed out specifically the application to be made of these facts.

Limited material that is carefully selected from among wall coverings, drapery material, and ornaments may be employed to show pleasing distribution of light and shadows, and of color. Out-of-door studies of lights and shadows and

The use of light and dark and of color in giving cheer to the interior of the house. Four lessons.

Look for pleasing combinations in one's own home, and no home is so humble but use of her own knowledge and of available literature to present this material that is so basic for the later work of the course.

Topic	Subject Matter and Procedure	Home Activities	Remarks
The interior finish and lighting of the house. Four lessons.	<p>of colors in nature provide unsurpassed illustrative material.</p> <p>It should be remembered that walls, ceiling and floor serve as background to the furnishings and should then be quiet and unobtrusive.</p>		<p>While it is important that one hold before the girl high standards of beauty — there must be used great care to not let the artistic interior possible in the costly city dwelling discredit the more generally modest home.</p>
	<p>The woodwork</p> <ol style="list-style-type: none"> 1. Floors, darkest note in room, of finish suited to use. 2. Door and window casings inconspicuous and in keeping with other finishes, easy to care for. 3. Walls, of lighter tone than floors, suited to exposure and use of room, restful, inconspicuous. 4. The lighting fixtures appropriate, placed to meet needs and easily cared for. <p>Colored illustrations clipped from magazines and supplied from other sources, may be excellently used to supplement text book material.</p>	<p>From catalogues and advertisements students can make collections of designs and colors. These may be graded</p>	<p>Stores are glad to show rugs and to explain quality.</p>
The floor covering. Two lessons.	<p>The floor coverings should meet the general requirements that the floor be darker than walls and ceiling, and that it should be in harmony with the dominating note</p>		

in the room. Consideration of factors that govern selection and placing on the floor. Illustrations of good and bad designs and samples of good and poor quality are available.

Consider the hangings in their relation to general color scheme. Consider factors that influence choice:

1. Purpose served.
2. Type of room.
3. Materials from which to choose.
4. Construction and hanging.

The window-hanging.
Two lessons.

The selection and arrangement of furniture and of lamps.
Four lessons.

Give emphasis to these general rules that govern the selection of furniture:

1. To suit the particular room and the needs of the members of the family.

2. Comfort.
3. Good construction.
4. Good in line.
5. Of good proportion.
6. Simple enough to insure good care.

Students will help to formulate rules that govern good arrangement. The portable furniture in a corner of the classroom may be used to demonstrate some arrangements and the furniture of the school building and pieces supplied by

Some mothers may permit their daughters to rearrange their own rooms. Graphic reports may be presented to the class. The rearrangement of the pantry shelves that they may at once more conveniently be used and give more pleasing appearance, was in one class a worth-while problem.

and arranged to show such gradation.

Topic	Subject Matter and Procedure	Home Activities	Remarks
Well chosen pictures. Two lessons.	<p>the instructor may be scored on the basis of selection.</p> <p>Very few but excellent pictures give more satisfaction than a mediocre collection. Students may be enlisted in the analysis of values contributed by good pictures:</p> <ol style="list-style-type: none"> 1. Art principles demonstrated through composition, line and color give pleasure. 2. Stimulation or expression of ideals through sentiment conveyed. 3. Decorative value. 4. Educational. <p>Such an analysis and classification to be followed by consideration of suitability of pictures to rooms of various types. The principles underlying suitable framing and hanging may be formulated by students with the aid of the teacher. The pictures of the school room and some brought in by students and instructor may be discussed from standpoints of tests evolved.</p>	<p>From magazines that have been discarded students may find very excellent prints which will be found useful in the development of the second lesson on pictures.</p>	<p>The instructor may have noticed in a home in the neighborhood some exceptionally good pictures framed very well. These may be mentioned in the class.</p>
Use and arrangement of flowers. One lesson.	<p>The container for flowers may be very pleasing and adequate, yet of low cost. The colors combined and the arrangement</p>	<p>The student may find from among the home collection of jars and bottles that have</p>	

served as food containers some that will serve as pleasing receptacles for flowers.

Discourage the purchase as gifts for others or for one's self a bric-a-brac that has no redeeming quality.

ment are important factors and within the control of everyone. Care of flowers is likewise easily mastered. Demonstrate good arrangement, using flowers and receptacles to be found in the average home.

The small ornament.
One lesson.

Selected for use and beauty. Show through illustrative material that the beauty may be in color, in beauty of line, or in shadows. Illustrate how with good placing the best effect is attained. Consider how such bits of ornament should be cared for.

Miscellaneous. The classroom and the school building as a whole.

Make a critical study of the classroom and of the school building as a whole to discover wherein possible changes give a more harmonious and altogether satisfactory effect. Set about to accomplish the improvement proposed.

Unity throughout.

Summarize the qualities that should characterize the house beautiful. This is one such a characterization:

The House Beautiful should

1. Express personality.
2. Regard art principles.
3. Be within one's means.
4. Have perfect care.

The class may better express these qualities.

III. Bibliography of the House Beautiful

Author	Title	Publisher	Year	Price
Goldstein	Art in Everyday Life.....	Macmillan	1924	\$3.50
Calkins, E. C.....	A Course in House Plan- ning and Furnishing.....	Scott and Foresman.....		
Jakway, B. C.....	The Principles of Interior Decoration	Macmillan	1922	2.50
Adler, Hazel	The New Interior.....	Century	1916	4.50
Holloway, E. S....	Practical Book of Fur- nishing the Small House and Apartment	Lippincott	1922	7.50
Forhne, H. W., and A. F.....	Color Schemes for Model Interiors	Lippincott	1919	4.50
Related Art for Home Economics Classes, Lila M. Welch. The University of Missouri Bulletin, Vol. 26, No. 28 (1925). Excellent.				

OUTLINE
OF
INDUSTRIAL SUBJECTS

INDUSTRIAL SUBJECTS

MANUAL TRAINING AND VOCATIONAL EDUCATION

Introduction

It is exceedingly gratifying to school administrators that the schools of the nation are being considered of indispensable service in the great world transition that is now taking place.

What will be the ultimate result of this recognition of school efficiency?

Already school-training has been found efficient beyond general prediction. Yet the prediction is made that school-training will be found weak, trivial and formal in the direction of the industrial arts. From everywhere comes the call for more expert mechanics and tradesmen to carry on the work in hand. But the number is inadequate. When the schools are appealed to for trained mechanics and tradesmen or for the immediate organization of instruction in these practical arts, their response has always been generous, but acknowledgement is often made that they are equipped for the training of professional engineers, professional agriculturists, professional in everything but not for the training of expert workmen.

If our education is to be democratic in its conception, it must necessarily meet the needs of the vast majority of the nation's citizens whose activities are identified with the trades.

Never before in the history of our country has education received so much attention in government councils as it does today. Many government agencies are now involved in shaping the education of our nation into various channels, and people everywhere are responding heartily to the cause of universal training that shall make for social service.

A. Types of Instruction.

According to their aim, scope and function, we have today a number of educational enterprises that make for skill and industrial intelligence from a plane quite limited to a degree which reaches the very acme of perfection. Among them are manual training, prevocational, vocational, industrial, technical, trade school, continuation school, part-time co-operative plan, etc.

The kind of instruction given depends largely upon its need and for whom it is intended, the facilities for carrying on the selected type of education, qualifications of teachers and methods

of administration and supervision, the size of the communities or cities where such training is to be given and the amount of the time allotted.

B. Manual Training.

1. Definition of Manual Training: Manual training is any form of instruction that introduces the boy to a series of typical, practical problems along industrial lines.

2. Aim and Scope of Manual Training Work:

Aims to provide for the needs of children from 12 to 16 years.

To overcome the isolation which so often exists between school and life.

To teach creative interests and develop creative powers.

To bring the boys into a more complete contact with life.

To insure the natural and healthy growth and development of our youth.

To train for the appreciation of all life's activities and the development of good citizenship.

To bridge the gulf between thinking and doing.

To uncover tastes and ability for vocational work.

To lay the right foundation for all forms for all productive and creative work.

To embody in its teaching a more strictly vocational trend for a broader view of life.

To touch the life of the boy in his work, play, school and home.

To give boys to whom book methods of instruction do not appeal, an opportunity to find themselves.

To correlate with other school subjects or academic work and must necessarily be cultural as well as vocational.

a. Elementary Period of Manual Training.

The elementary period, is that period which follows immediately the kindergarten or primary period, extending normally to about twelve, and embracing the instruction given in the first six years of the public school course. The limits, however, of this period cannot be definitely fixed.

The primary aim of manual arts in the lower grades (primary and elementary) should continue to be general education.

In grades one to six not less than one-tenth to one-eighth of the present school time should be set aside for elementary hand-work.

Shop work under the direction of a manual training instructor may begin with the fifth grade.

The nature of the work undertaken must of necessity be in keeping with the nature and needs of the pupils in hand.

Work can be done in thin or soft wood, paper and cardboard, clay, raffia, reed, yarn, etc.

“The best effect of manual work is seen in the moral power it exerts. Bodily occupation is everywhere elevating and healthful, and morality and religion are built upon industry.”—Clarence Franklin Carroll.

1. Aims and Standards of Instruction in the Elementary Period.

The aim of instruction and choice of subject matter and projects in making a curriculum in Manual Training for the elementary period should be governed by the following:

To be essentially informational and developmental in character.

To appeal directly to the instincts and interests of the pupils.

To assist in the development of right habits of thinking.

To enable the child to live more efficiently his life of choices.

To develop the child's senses and powers of observation.

To establish the more fundamental forms of mental and muscular co-ordination so essential for efficiency in all forms of future work.

To give the boy a sympathetic attitude toward his fellow man as worker.

To develop a large variety of mental and physical forms of control which later form a necessary basis for successes in any field of work.

To develop the artistic or aesthetic sense of the pupil for the beautiful.

To correlate freely and vitalize the work of the regular school course.

b. The Prevocational Period.

The prevocational period, extending from about twelve to sixteen, and embracing normally the work of the last two years of the elementary and the first two years of the high school.

In many school systems this period takes in the division known as the “junior high school,” grades seven, eight, and nine.

1. Aims.

As a part of the junior high school, the tendency in prevocational education is in the direction of offering an acquaintance with a variety of industrial occupations as a part of the school program, enabling a boy to find himself and helping him somewhat in choosing his future occupation.

It is the "finding and try-out" period in a boy's education which is usually coupled with a study of those subjects which will give him a broad and necessary foundation for professional and technical work. In most cases the vocational work in the higher technical trade, vocational and professional school will not begin until the prevocational or professional preparatory courses have been finished.

"Prevocational work has for one of its purposes the equipping of the boy or girl with certain occupational experiences and information of a vocational guidance value. The experiences are gained largely by contact with tools, equipment and materials on constructive problems typical in part of actual shop conditions. The informational aspect is the resultant of the shop contact, plus selected material concerning the various occupations not included or gained under experiences."—R. H. Rodgers, Stout Institute.

Another aim of the prevocational period, intermediate schools and junior high schools, is to bridge the unfortunate gap that has so long existed in our educational system between the elementary and high schools.

It retains many of the methods of the elementary period and at the same time introduces such methods of the high school as departmental instruction.

It aims further to meet the needs of many boys to whom the book methods of instruction do not appeal and give them the opportunity to develop along lines for which they have natural qualifications. This prevocational work should not, however, be segregated from other school work, but should be closely correlated with it.

Diversified courses in the prevocational period will undoubtedly begin the preparation of lifework for many boys, but it should not be assumed that all boys taking such work will go into the industries. As a "finding" period this scheme of industrial education "should be liberal enough to help those who can continue their school work to more wisely choose their courses in higher education, and likewise help those who find it necessary

to leave school with a minimum amount of education to choose their respective occupations more intelligently."

2. Scope of the Work.

The work of this prevocational, or finding and try-out period, should be so organized as to be able to present a number of subjects typical of the chief industries not only of the community, but of the state, the nation, the world.

"It is the inherent right of every child that he shall have, before he leaves school, an insight into various important industries carried on not only in his own community but in the whole world."—Rosana Hunter.

The introduction of prevocational education can not, of course, be the same in every community or school system. The character of the work must of necessity be limited. Rural schools can not be asked to do the same work as the city school. This would be preposterous.

Hence, the curriculum in small cities must be so reconstructed to suit the general school and community conditions. Just as many tools, pieces of science apparatus, books, photographs, etc., should be available in town or consolidated schools as the teachers could use effectively and the community would care to pay for.

In cities of 10,000 or more the following types of work might well be introduced in the course of study: drafting, electricity, plumbing, automobile work, sheet metal work, painting, printing, blacksmithing, concrete work, machine shop practice, pattern-making, cabinet-making, carpentry, telegraphy, etc.

Other lines of shop work might be substituted for any of these, but such types should be selected which include some of the representative industries of the community or state.

Thus, we have an educational system with extensive aims spread over a variety of experiences for vocational acquaintance as contrasted with intensive aims concentrated upon a few subjects for the development of skill. In the prevocational, the experimental or try-out period, the former aim predominates.

Prevocational education should be broad enough to provide for both boys and girls subjects like salesmanship, office work, showcard writing and window-trimming. Housekeeping, catering, nursing, dressmaking, etc., should be included for the latter. All work should be made as practical as possible from the standpoint of the pupil and suited to the needs of the industries of the community.

3. Time.

Adequate work can not be done on 60 or even 90 minutes per week. The schools shall never be able to show or satisfy the public who demand a dividend on their money, unless they get more time for their work. The experimental or try-out period (seventh, eighth and ninth grades) should offer, in cities of about 5,000 or more, four subjects per year or sixteen subjects in four years. The time devoted to each subject should not be less than one and one-half hours per day for nine weeks.

"Children will never be enabled to use their best powers in the service of the nation until school and industry, school and garden, school and workshop are associated allies in the task of education, with the family as third partner."—Dr. John H. Finley.

4. Methods of Study and Presentation.

The methods of presenting the work of prevocational education and the nature of the work presented may be classified in general into three classes: a, the participation or shop method; b, the observation method; c, the academic method.

4a. The Participation or Shop Method.

In presenting instruction for boys taking these vocational acquaintance courses, ample opportunity should be given to participate, so far as possible, in the industry studied. It is only by getting actual experience in the fields of work taken up that the best results may be obtained. As this period aims primarily in gaining for the boys reliable information with which to judge the industries, a high degree of manipulative skill is not an absolute essential, yet good workmanship and care in construction should be the rule.

Actual experience should be given by repeated drill and practice upon certain operations that are true and typical to the industry under consideration and study if it is to have any vocational guidance or permanent value for the boy.

"The operations, however simple, should show the demand for standarization of parts in commercial practice, the adoption of special shop kinks, the use of jigs and automatic devices, and the development of uniform motions in working operations with the attainment of adequate speed."—G. F. Buxton.

4b. The Observation Method.

Not all industries can be studied exclusively by the participa-

tion method in the school shop. This should not be the case even though it were possible during this period.

There are, however, groups of industries in school communities which can not be duplicated or studied to advantage in the school workshop. They must be studied, if at all possible, by the observation method. Among the industries in this group belong steam engineering, paper-making, railroad engineering, the more advanced phases of the manufacture of automobiles, aeroplanes, motors, etc., boots and shoes, the textile industry, iron and steel, etc. For a study of the above group and other groups in which the pupils participate, trips should be taken to the mills, the factory or the railroad yards, for first-hand observation and information.

4c. The Academic Method.

Many of the industries can be studied by the participation and observation method; with some of these this is not possible. In either case an academic study of the industries should be correlated with the other two methods.

The academic method, vocational guidance or "occupational information" is used in making further study, investigations of the industries as to wages, needs and opportunities, character and possibilities of occupations, etc. Information is obtained and gathered from many places and presented in the form of lectures, slides and moving pictures, illustrations, lectures and reading.

5. Vocational Guidance.

To make the work of the prevocational preindustrial education entirely successful, the subject of vocational guidance should be given considerable attention in order that the boy might be early set in the right way.

"As a part of the school system vocational guidance should be definitely organized and supervised. Small systems in cities of ten thousand should have an adviser devoting full time to the work; large city systems should have a supervisor with assistants in the several schools constituting a bureau."

Vocational guidance should be a distinct function of the entire system belonging to all the departments, and continuing throughout the school career of the pupil. Special emphasis, however, should be given just before the child reaches the work age, or passes into the high school; and again in the senior year when the pupil is face to face with vital life problems.

Vocational guidance thus organized will concern itself with these problems:

1. The accumulation of information about vocations.
2. The imparting of information about vocations.
3. The direction of the education of the pupil to best serve his needs.
4. The introduction of vocational courses.
5. The prevention of leakage from schools.
6. The adjustment of the pupil to his life work.

"When the school systems assume the responsibility for the vocational guidance of the youth, they will be more practical, and much of the waste that characterizes the present methods will be eliminated."—L. W. Bartlett, Pomona, Cal.

The following is an outline for vocational guidance or related "occupational information":

- "1. What demands does the occupation make upon the worker?
 - a. Physical.
 - b. Mental.
 - Peculiar abilities required.
 - Length of schooling. Accompanying financial burden.
 - c. Moral.
2. What does the occupation offer the worker?
 - a. Chance for promotion.
 - Local or country-wide.
 - Organization of labor.
 - Steadiness of employment, etc.
 - b. Health conditions.
 - c. Moral conditions.
 - d. Opportunities for recreation and self-improvement.
 - e. Opportunities for service in the community."

(See "Vocational Information as a Part of Prevocational Work," by R. H. Rodgers, in the *Industrial-Arts Magazine*, p. 105, March, 1918).

Related work in various studies, such as arithmetic, English (spoken and written, including reading and spelling), history, geography, science, hygiene, drawing and choral practice should be given special attention, together with the work as outlined above.

The reports of social, educational and industrial surveys contain much that may prove of help in gaining an accurate and detailed knowledge of many of our great industries.

Commercial pamphlets and catalogues have printed in them matter describing their products, the materials entering into the construction of these products, the processes involved in the transformation of the materials, how to do them properly, etc., which is of great value to the instructor of "occupational" information. Further information along this line can be learned from the pages of standard magazines, and technological journals, reports and bulletins issued by the various departments of education at Washington, D. C., and other cities and states.

Catalogues, booklets, handbooks, magazines, and books relating to many of the basic industries, should be found in every shop library. Every school board should lend financial aid in this direction, for the reason that such an equipment is fully as essential as tools, machinery and other shop equipment. They are the tools necessary for academic work in the prevocational period in that they assist in correlating with and vitalizing other school subjects.

Prevocational work is far wider in scope than many administrators recognize. Prevocational, pre-industrial education, like vocational educational education has to do with all vocations—commercial, professional, industrial, agricultural, household arts and other.

"Industrial education is one of the essential things needed to offset the monotony and specialization of modern industry, and to enable workmen to find and keep their jobs."—John R. Commons.

6. A Plan for Small Cities.

In cities where the departmental plan, junior high or prevocational plan has not been adopted and but one and one-half hours per week is given to grade boys, the work has failed to interest the boys because of the long time between lessons. The boys lost track of their work.

This plan has always been very unsatisfactory and a change been made in several manual training centers with good results.

The new plan consists in having one class come to the shop for eighteen consecutive days instead of the old way when the boys came eighteen times in eighteen weeks. This plan made for efficiency in quantity and quality of the work done and has a most

wholesome effect upon the boy. The interest shown by the boys more than justifies the change from the old to the new.

The plan also does away with the purchase of much new material each year where the same had to be duplicated each time.

Under the old plan the boys in one class would often get their projects mixed with those of another. The new plan eliminates this condition entirely.

The girls in the same grades go to domestic science and sewing classes at the same time that the boys go to the shops, and the teachers of these departments report equally good results.

7. Shop or Constructive Work in the Prevocational Period.

Many types of constructive work might be arranged for in most cities of Colorado; among them occupations found in the woodworking industries, printing, metal work, cement, or electricity would be found the most profitable to include.

It is not the purpose of this pamphlet to outline in detail outlines of courses for each type of work that might be undertaken in any school shop. The guiding principles as outlined in the above chapters should be strictly adhered to, to insure the right standards of workmanship and secure for the pupil correct habits and industrial intelligence and appreciation that will make for universal service and leadership.

The junior high school, to be democratic, must be broad in its conception and include in its experiences true types of modern vocations, such as agricultural, manufacturing, commercial and to some extent the professional. Constant attention should be given to instruction, observation and manual action. Manual action or vocational experience with the concrete materials and processes of various vocations is worth infinitely more than any "amount of second-hand knowledge gained through reading or the advice of adults."

The junior high, if properly organized and handled, will show that all education should be closely related to vocational preparation and disclose the undeniable truth "that industry is the indispensable foundation of living, and of good living."

8. Shop Exercises.

The above analysis indicates that a period of required exercises, models, pieces, so often found in shop courses, do not and can not achieve the results desired.

In planning our work for the lower grades, let us not neglect to give opportunity for originality, constructive design, creative ability, self-reliance and the initiative.

In our desire to render aid and support to our government and do our bit in the shops, F. H. Shepherd, of the Oregon State Agricultural College, Corvallis, and assistant director of education and special training, Committee of Education, War Department, said recently with reference to making Red Cross, Y. M. C. A. and camp projects:

"I am wondering what more useful lessons could be given to boys than teach them to meet the demands of society for needed articles whether it be a baseball bat or an aeroplane.

"We must get away from the formal exercises and models of the schoolroom or our boys will never be trained, in school, to meet an unusual condition. An educated person is an unusual one, who is never nonplused in an unusual position, so training our boys to meet the demands of the present unusual conditions is surely adding to their education."

9. Mechanical Drawing in the Grades.

The drawing of plans, designing, sketching, drafting, blue prints, reading, working, drawing or plans, etc., is necessary to the efficiency in any line of shop work. Mechanical drawing is the basis for all shop work and is essentially its reading or primary course.

Mechanical drawing in the grades, although it is not as formal as that of the high school, yet it should be as carefully taught as any other subject in the curriculum.

The best results to be obtained during this period is to spend about eight, nine, ten or twelve weeks in mechanical drawing before any work in the shop is attempted. All shop exercises should be preceded by a carefully executed working drawing of the same.

INDUSTRIAL ARTS IN RURAL SCHOOLS

Perhaps the greatest consideration in this pamphlet should be given to our rural schools, for the reason that they are not always able to receive the careful guidance and help from trained specialists and teachers of industrial arts. Then, too, these schools do not possess the facilities, equipment and means to carry on successful manual training, as is the case with a well organized city school system, with its greater financial support, better buildings, etc.

Even though such conditions exist that apparently hinder her progress in industrial education, there are, indeed, splendid opportunities at this time for the rural school in which to render a most praiseworthy service.

In the smaller schools and poorer districts, workbenches can be made by the boys themselves. To be sure, the making of a workbench is a splendid problem for any boy in any school, workshop, or home. Plain benches can be constructed from common lumber or heavy packing boxes to which a vise-screw can be fastened. The latter can be purchased for about \$1.50.

As to tools—some of these can be obtained from home by the pupils and the rest purchased by the school board. Funds can be raised for necessary manual training equipment, by giving some performance, operetta, playlet, etc., that has been arranged by the pupils and their teacher. Patrons of a community are always willing to give their support towards a worthy cause in this fashion. The objection to be found with tools that might be brought from home is that they are of an old pattern and often useless for effective workmanship.

In outlining a course for rural school manual training, one must consider at all times the needs of the community and that the work undertaken should touch the life of a boy in his work, play, school, and home. Exercises and problems should be selected which will enable pupils and students to secure further training through designing and constructing things of practical use and service in their home and on the ranch. Manual training carried on in the right way by a tactful teacher, will be found to inspire pupils with greater enthusiasm for all school work in general. The thoroughness, accuracy and attention to detail insisted upon in this work, react admirably upon the character of the students.

As to courses of study and projects, do not have hard-and-fast rules. Select projects and processes that are adapted to the ability of the pupils at hand and that awaken interest and are serviceable.

In township schools and country high schools, the students should be taught to work with a number of materials, with "farm mechanics" as the principal thought of instruction.

Manual training shops equipped for woodworking and iron work can give prompt and efficient service to farmers within the district in repairing farm machinery of all kinds. Such an implement hospital could be kept running during the summer months,

when the wear and tear on farm machinery is greatest. Farmers should be asked to pay for all materials used and meet all other expenses involved in the repair of their farm implements.

Suggested Problems and Processes for Rural Manual Training Classes

- | | |
|-------------------------------------|---|
| 1. Setting posts. | 16. Painting. |
| 2. Building fences. | 17. Glazing. |
| 3. Planting trees. | 18. Soldering. |
| 4. Oiling harness. | 19. Gluing. |
| 5. Pruning trees. | 20. Knot tying. |
| 6. Mending with rivets. | 21. Lubrication of farm machinery. |
| 7. Mending harness. | 22. Care and running of gas engines. |
| 8. Caring for farm and other tools. | 23. Forging, welding. |
| 9. Protecting trees. | 24. Grinding and sharpening edge of tools, mowers, binders, sickles, etc. |
| 10. Putting handles in tools. | 25. Pipe work. |
| 11. Nailing on horseshoes. | 26. Belt lacing. |
| 12. Sharpening plows. | 27. Gas tractor operation. |
| 13. Laying cement walk. | |
| 14. Hanging doors. | |
| 15. Setting locks. | |

List of Agricultural Problems

- | | | |
|----------------------|--|----------------------|
| Tool chest | Shrub label | Cold frame |
| Nail box | Fireless cooker | Oats sprouter |
| Bench hook | Chicken brooder | Kitchen cabinet |
| Neckyoke | Sawhorse | Potato marker |
| Three-horse evener | Stepladder | Carpenter's vise |
| Clothes stick | Whiffle-tree | Rabbit hutch |
| Concrete forms. | Beehive | Poultry house |
| Fly traps | Wash bench | Miter box |
| Seed-testing box | Clothes rack | Workbench |
| Corn rack | Rabbit trap | Milk stool |
| Sheep-feeding trough | Bird house | Forcing box |
| Hayrack | Corn dryer | Hand cultivator |
| Dog house | Cattle rack | Chicken coop |
| Hotbed | Hog rack | Gate |
| Water trough | Portable hog house | Wagon box |
| Chicken crate | Table for milk tester and other purposes | Wagon feeding trough |

Road drag	Nests for laying hens	Wood and kindling
Hothouse	Trellis, row-marker	box
Sack frame	Flour box	Furniture

To these might be added other problems for the shop, poultry yard, seed corn, yard, the farm house, garden, stock, barn yard, bees, concrete work and other miscellaneous needs.

Shop Equipment Suitable for Industrial Arts Work in Rural and Small Town Schools

(a) Woodworking Tools for a Rural School Shop:

- 1 No. 5 Bailey jack plane.
- 1 22-inch 10 point, crosscut hand saw (Disston or Atkins) No. 3.
- 1 22-inch 8 point, rip saw (Disston or Atkins) No. 65.
- 1 No. 915, 10-inch Sweep Stanley ratchet brace.
- 1 $\frac{1}{4}$ -inch, $\frac{1}{2}$ -inch, 1-inch and $\frac{3}{4}$ -inch (Russel Jennings or Irwin) augerbit.
- 1 Clark's expansive bit No. 2.
- 1 Rose counter sink.
- 1 No. 101 Goodell reciprocating drill.
- 1 $\frac{1}{8}$ -inch, 5-32-inch, 3-16-inch, 7-32-inch and $\frac{1}{4}$ -inch drills.
- 1 No. 51 Stanley spoke shave.
- 1 No. 71 $\frac{1}{2}$, Buck Bros. 8-inch drawing knife.
- 1 No. 35, Buck Bros. chisels, $\frac{1}{4}$ -inch, $\frac{1}{2}$ -inch, 1-inch.
- 1 Hickory mallet, 2 $\frac{1}{2}$ -inch by 5-inch.
- 1 No. 12 Maydole hammer.
- 1 Champion screwdriver, 8-inch.
- 1 Monkey wrench, 8-inch.
- 1 No. 25, 8-inch Stanley bevel.
- 1 No. 65, Stanley marking gauge.
- 1 Eagle pencil compass No. 576.
- 1 2-inch Combination oil stone (unmounted), 7-inch.
- 1 Oil can.
- 1 All bristle 9-inch duster.
- 1 Iron bench screw, 1 $\frac{1}{8}$ x12.

Estimates of the cost of this equipment may be had at the local hardware store.

Shop Equipment

(b) Tools for General Blacksmith Work:

Elementary shop and practice work and repair work in iron

and cement would make a very desirable line of work for such a shop. For this work the following equipment would be required:

1 18-inch hand-blown forge.

1 kit of blacksmith's tools:

1 14-inch tongs, 1 hardie,

1 cold chisel, 1 blacksmith's hammer, 2 lb.

1 hot chisel, 1 10-inch pinchers.

1 blacksmith's anvil (Hay, Buddon or Trinton).

1 hand drill press.

1 3½-inch mechanic's Vise (Reed).

1 No. 10, all steel tinner's snips.

See catalogs for present prices.

(c) Tools Needed for Simple Cement Work:

1 mixing hoe.

1 shovel, No. 2 square point, D handle.

1 10-inch Cincinnati pattern plastering trowel.

1 10-inch Rose pattern trowel.

1 5-inch pointing trowel.

The boys and teachers should make all mixing troughs and bins needed for the cement work.

(d) Soldering:

1 Gasoline torch, \$3.50.

1-oz. String Solder.

1 "Nokorode" Soldering Kit:

1-oz. roll friction tape.

2 oz. box "Nokorode,"

2 strips emery cloth,

Soldering Iron,

Wooden case.

1 Handle,

Entire outfit, \$1.00. Directions included with the outfit. For sale by local dealers.

(e) Painter's Tools:

Oval brush, No. 8.

Glass cutter.

Varnish brush, 2-inch.

Putty knife.

Varnish brush, 3-inch.

Sash tool, No. 2.

Wall brush, No. 6.

Further Helps for Teachers of Manual Training in Rural Schools

Charts of tools, catalog, etc. (free)—Stanley Rule & Level Co., New Britain, Conn.

Charts of files, saws, booklets on sharpening saws, etc. (free)—Henry Disston & Sons, Inc., Philadelphia, Pa.

A Simple Trap Nest for Poultry, Farmers' Bulletin No. 682, U. S. Department of Agriculture.

The Road Drag and How It Is Used, Farmers' Bulletin No. 597, U. S. Dept. of Agriculture, Washington, D. C.

Wood Finishes for Manual Training Schools, The Marietta Paint and Color Co., Marietta, Ohio.

Manual Training School Equipment, Benches, Tools, Supplies, etc., Catalog, Belcher & Loomis Hardware Co., Providence, Rhode Island.

Furniture for Amateur Craftsmen (Cypress Library), Southern Cypress Mfrs. Ass'n, New Orleans, La. (free).

The Proper Treatment for Floors, Woodwork and Furniture, S. C. Johnson & Son, Racine, Wis. Also send for Portfolio of Wood Panels (free).

Simonds Manual Training Series: No. 1, Booklet, "The Professor and the Saw." No. 2, Charts, set of Educational Blueprints. No. 3, Booklet, "How to File a Hand Saw." No. 4, Plans, Specifications, and Tool Equipment for Manual Training Department (free). Series No. 4 contains two blue prints of "Bench Plan for Group of Six Pupils, Bench Plan for Individual Pupils," with instructions for making—Simonds Mfg. Company, Fitchburg, Mass.

A sample of the Griffin copying saw blade and printed circular, John H. Graham & Co., 113 Chambers Street, New York.

The Use of Paint on the Farm, Farmers' Bulletin No. 474, U. S. Dept. of Agriculture.

The Repair of Farm Equipment, Farmers' Bulletin No. 347, U. S. Dept. of Agriculture.

Quarterly Bulletin of Milwaukee School of Agriculture and Domestic Economy, Vol. 4, No. 4, Feb., 1915, Wauwatosa, Wis.

Laboratory Exercises in Farm Mechanics for Agricultural High Schools, Farmers' Bulletin No. 638, U. S. Dept. of Agriculture.

Farm-and-Home Handicrafts Club Projects (20), issued by the Oregon Agricultural College Extension Service, Corvallis, Oregon.

Further Helps

Farm-and-Home Handicrafts Club Projects—State Club Leader, Oregon Agricultural College, Corvallis, Oregon.

Home-made Fireless Cooker, Farmers' Bulletin No. 771, U. S. Dept. of Agriculture.

Good book for beginners—Essentials of Woodworking, by Ira S. Griffith, 75c, Manual Arts Press, Peoria, Ill.

Farm Home Conveniences—Madge V. Reese, Farmers' Bulletin 927, U. S. Dept. of Agriculture, Washington, D. C.

Send for Catalogs:

"Books on the Manual Arts"—a bibliography listing and describing 400 books (mailed free). The Manual Arts Press, Peoria, Ill.

Mechanics Handbook, Millers Falls Co., Millers Falls, Mass.

"Yankee Tool Book," North Bros. Mfg. Co., Philadelphia, Pa.

Manual Training Catalog, E. C. Atkins & Co., Inc., Indianapolis, Ind.

Carborundum Pocket Stone and Complete Catalog, The Carborundum Co., Niagara Falls, N. Y.

Good Journals:

Industrial Arts Magazine (monthly). \$2.00 per year, The Bruce Publishing Company, 129 Michigan St., Milwaukee, Wis.

Manual Training Magazine (monthly). \$1.25 per year, The Manual Arts Press, Peoria, Ill.

OUTLINE

OF

HYGIENE AND PHYSICAL CULTURE

HYGIENE AND PHYSICAL CULTURE

Junior High School

Grades 7, 8, 9

I. Educators of the country are coming to realize as never before that the proper understanding of the body, its use and care are vital necessities of any educational program, which has as its ultimate aim the betterment of the boys and girls in what they will naturally do.

In order to accomplish this end the child must have an intelligent understanding of his own body and the laws which govern its welfare and must have a desire for those daily practices which maintain health, prevent disease and prolong life.

Too long has the study of hygiene been merely a study of bones, muscles and joints as such without considering their relation to the body which is the engine of our life. If this engine is to properly perform its duties, not only must its parts be known, but also their use and care. Not only must knowledge of these facts be imparted to the children, but they must be led to apply this knowledge right in the school. In so much as this is accomplished, will we succeed in the proper teaching of hygiene and health.

The correlation of hygiene and physical culture seems a fundamental requirement to successful health instruction. In this way the pupils become "doers as well as hearers".

Periods of hygiene and physical culture should alternate days with at least 150 minutes per week and probably not more than 200 minutes divided into four or five class periods. Instruction should be in the hands of competently trained teachers of hygiene and physical culture, with men teachers for boys and women teachers for girls. The ideal method is to have the boys and girls segregated for this instruction. The reasons for this are too obvious for comment.

The demand of America today is a conservation of all resources, and certainly one of the most valuable of her resources is her supply of boys and girls. In order to conserve this resource, children must not only know the make-up of their body, but at the same time must know how and when to care for that body. For that reason this course of study at all times, emphasizes the hygiene and health of the body rather than the physiology, although a certain amount of that is necessary.

Physical culture is coming to the front in the educational program of the nation and must be recognized as contributing very materially to the progress of the child. A well organized course in physical education is a vital part of every hygiene course.

Every boy ought to be physically efficient; every girl should have poise and control over her body, and every boy and girl should be able to attain a minimum physical standard. These may be secured by a properly organized course in physical culture, consisting of formal drill, calisthenics, marching, games, folk dances, rhythmic dances to music, and organized games and inter-class and inter-school athletics.

No longer is the physical culture class for boys alone. Girls are now taking a leading part in those classes. Today we must provide for physical classes for both boys and girls.

The physical culture teacher must be trained in the work; sympathetic to the child; cognizant of his or her limitations and a good disciplinarian. An aid to discipline in the physical culture class is a loud toned whistle which commands instant attention. In cases of big drills with hundreds of students, the whistle may even be used to give signals. The teacher must be a master of drill work and give commands without hesitation. Games must be thoroughly understood and directions plain and complete. It is not necessary for the physical culture teacher to be an expert in the organized games, but some general knowledge is essential.

The physical culture class is not an attempt to put out winning athletic teams, but is rather to give every boy and girl some chance for physical development. It is not necessary to try to do away with competition in any sense, for individual and class competition are natural outgrowths of the physical culture work. This takes the form of standard athletic badge tests and individual points for track and field work among the boys. It also leads to inter-class games in volley ball, football, baseball and basket ball. In this connection, it is well to have some award or awards to be given to champions or championship teams. However, do not give your classes the idea that winning is the only thing. Let us follow the advice of Henry Van Dyke, who says: "When you play a game, always wish and try to win, otherwise your opponent will have no fun; but never wish to win so much that you cannot be happy without winning. Take pleasure in the game even though you do not obtain the victory, for the purpose of the game is not merely to win, but to find joy and strength in the trying."

The boys' work in physical culture can naturally be more strenuous than that of the girls. This may take the form of marching, drills, calisthenics group games and organized games. However, even with boys, care must be taken not to overdo, and especially is this true of the organized games and track and field events. The boys will always take to the organized games and it is well for the man in charge to be well acquainted along these lines.

The girls' work will be less strenuous and should follow the lines of lighter calisthenic drills and marches with more of the group games and less of the hard organized games. Girls will take volley ball, baseball and basket ball, while boys will take, in addition to these, football and track.

Girls' and boys' games should both be organized so that everyone has an opportunity to play. New games may be best introduced in the rooms where blackboards may be used. In large classes assistants may be appointed from some of the better students or from some of those difficult to discipline, as the responsibility keeps them busy. All instructions should be rigidly enforced.

Games should be played for the fun of playing and not because the teacher says so. See that the pupils like a game. If they don't, let them suggest a change.

Girls will also adapt themselves very readily to the folk dances and singing games. The folk dances have sprung naturally from the hearts of simple, wholesome country folk in response to the human need for self-expression, and offer the teacher a wonderful outlet for the girls' natural desire to express themselves by muscular movement, but should not be given as a means of "showing off" for the benefit of the onlooker.

The molding of the body of a boy or girl requires all the attention the teacher can give, but the result is worthy of the effort. The physical culture teacher not only molds the body, but determines very greatly the mental and moral side also. For where in the school life do we find as good an opportunity to develop habits of character as on the playground and in the gymnasium?

The boy or girl must develop individually and at the same time, meet the demand of team play. This calls for fairness, good sportsmanship and cooperation. Officials' decisions must be accepted and respected.

Working together the hygiene teacher and the physical culture teacher may do more for the school boy and girl of today than any other teacher or factor in the educational system. With

this idea in mind, it behooves us to give our best to showing the child what his body is and how best to care for it.

Grades 7, 8, 9

Outline

Grade Seven. First Semester.

I. General Health:

1. Posture:

- a. Standing or sitting.
- b. In the schoolroom.
- c. Curvature and flat feet.

2. Sleep:

- a. Required amount.

3. Health Habits:

- a. Make "Health Books" with pictures and clippings of good health.

- b. Rules for "Good Health".

1. Full bath at least once a week.
2. Brush the teeth at least once a day.
3. Required amount of sleep with windows open.
4. Drink as much milk as possible, but no tea or coffee.
5. Eat some green vegetable or fruit every day.
6. Drink at least four glasses of water a day.
7. Play a game every day out of doors if possible.
8. A bowel movement every day.

- c. Make a vegetable chart of all the vegetables you know and mark the ones you like. Every month see if you can learn to eat some vegetable you do not like now. (Credit should be given when a child learns to eat most of the common vegetables.)

Physical Culture

Examination of all students by competent medical authority. Records to be kept on individual health cards showing height, weight, normal weight, physical defects. Also whether eyes, ears, nose, lungs, teeth, and heart are in proper condition. (Unless examination shows prohibitive defect, every boy and girl should be required to take the physical culture work.)

Start formal drills, marching, and group games at least once a week.

Games: "All-Up Relay"; "Dumb Bell Tag"; "Maze Tag".

Second period of physical culture per week to be devoted to organized games. Emphasis, at this time, to be placed on sportsmanship and rules of the game.

Boys' Soccer Football and Playground Baseball.

Girls' Volley Ball and Playground Baseball.

II. Bones:

1. Structure.
2. Use.
3. Joints.
4. Ligaments.
5. Sprains.
6. Dislocations.
7. Breaks.
8. Deformities.
9. Class work.

(Have children bring bones of different shape, size and age to school to be examined.) A microscope and magnifying glass will add to the interest of this work.

Physical Culture

Continue drills and group games.

Start inter-class schedules in organized games.

III. Muscles:

1. Importance.
2. Kinds.
3. Structure.
4. Use.
5. Growth.
 - a. Natural.
 - b. By exercise.
6. Class work.

(Examination through microscope of raw and cooked meats.)

Physical Culture

Continue formal work and group games preparatory to fall demonstration.

IV. Eating:

1. Food:
 - a. Its elements.
 - b. Its values.
 - c. Its composition.

- d. Kinds to eat.
 - e. Effects of cooking and seasoning.
 - f. Drinks.
2. Do's and Don'ts of eating.

Physical Culture

Demonstration of marching, drills and group games by both boys and girls.

Start Athletic Badge tests for both boys and girls.

(Material may be obtained from Dept. of Interior. See Bibliography.)

V. Circulation:

1. The heart pump and its pipe lines.
2. Composition of the blood.
3. Circulation of the blood.
4. Purification of the blood.

VI. Respiration:

1. Lungs.
2. Changes produced by breathing.
3. Objects of respiration.

Physical Culture

Continuation of drills, calisthenics and athletic badge tests.

Group games. Boys, "Saddle the Hag"; Girls, "Corner Spry."

Organize class schedules for basket ball.

Seventh Grade. Second Semester.

I. Personal Hygiene:

Illustrated lectures and talks by instructors or competent outside authorities.

Physical Culture

Repeat physical examination recording results as before. Determine whether improvement has been made, and if not, take measures to correct the deficiency.

Girls Take up folk dances and singing games for one period of the week. Lay stress on corrective work to bring about improvement. Continue athletic badge tests.

- Boys Continue athletic badge tests.
Stress corrective work in calisthenics.
The singing games may be taken up with considerable success.

II. Organs of Special Sense :

1. Eye.
 - a. Description and care.
2. Ear.
 - a. Description.
 - b. Work of the canals.
3. Nose.
 - a. Aid in breathing.
 - b. Adenoids.
4. Tongue.
 - a. Use.

Physical Culture

Awarding of athletic badges. (These badges should be purchased by the students themselves as is now done in penmanship.) Inter-class basketball tournament with a pennant being awarded the winner.

- Boys Start explanations of track and field events together with training rules.
Organize individual point system for track competition.

- Girls Continue calisthentic drills with introduction of some fancy drills, marches and folk dances.

III. Skin :

1. Layers.
2. Blood tubes.
3. Nerves.
4. Glands.
 - a. Perspiration.
5. Hair.
6. Nails.
7. Care of the skin.
 - a. Bathing.

Physical Culture

Reorganize inter-class baseball schedule which shall determine the school championship.

Boys Start strenuous track practice, keeping individual records by point system.

Round out work with gym period of drills and calisthenics at least once each week.

Girls Continue calisthenic drills.

Begin work for spring festival.

IV. Teeth:

1. Importance.
2. Structure.
3. Kinds.
4. Care.

V. Feet and clothing:

1. Arches.
2. Importance of correct shoes (Shoe experts are willing to give lectures on this subject).
3. Clothing materials.
4. Requirement:
 - a. Proper ventilation of the skin.
 - b. Reasonable warmth.
 - c. Cleanliness.
 - d. Freedom from pressure or binding.
5. Habits to form.

Physical Culture.

Girls present spring festival and boys stage field day.

Corrective exercises for the feet, such as: Turning toes in; rising on toes 50 to 100 times; roll outside of foot without shoes on. Straight front standing position rather than angle.

Girls May Day dances and festival drills, colors being in evidence.

Boys Stage field day consisting of drills, marches and field and track events.

VI. Stimulants and Narcotics:

1. Tea.
2. Coffee.
3. Tobacco.
4. Alcohol.
5. Opium, morphine, heroin, cocaine, coal tar products.

Physical Culture.

Complete all inter-class competition and make awards.

File individual health record cards for future use.

Boys Complete individual track competition, post results and give awards.

Grades 7, 8, 9

Eighth Grade—First Semester

I. General Health.

1. How to relax.
2. How to sleep for health.
3. Baths and bathing.
 - a. Cold water.
 - b. Sponge.
 - c. Hot water.
 - d. Open air bathing.
4. Value of exercise.
 - a. Development.
 - b. Corrective.

Physical Culture.

Refer to outline for seventh grade.

Very little change is necessary in content. Group games and drills may be made progressively difficult through the eighth and ninth years with more attention put upon organized games. The difference between the work in these three grades should be chiefly in the degree of difficulty and standards of achievement rather than in content.

II. Digestion.

1. Digestive system.
 - a. Glands that aid in digestion.
2. Journey down the food tube.
3. Foods:
 - a. Food values.
 - b. Sample menus.

III. Circulation and respiration:

1. Heart pump and its pipe line system:
 - a. Blood vessels.
 - b. Phagocytes.

2. Lung bellows:
 - a. Structure.
 - b. Enemies.
 1. Need of fresh air.
 2. Dust.
 3. Colds.
 4. Tuberculosis.
 5. Pneumonia.

IV. Skin and Excretory System:

1. Glands and nerves.
2. Care.
3. Effect of heat and cold.
4. Liver.
5. Kidneys.
6. Nose and Throat.
7. Disposal of sewerage and garbage.

Eighth Grade—Second Semester.

I. Nervous System:

1. Development of life:
 - a. Amoeba.
 - b. Amphioxus.
2. Parts of nervous system:
 - a. Brain.
 - b. Spinal cord.
 - c. Nerves.
3. Nerve cells and fibers.

II. Effect of Fatigue on Brain and Muscle:

1. Toxin of fatigue.
2. Fatigue as a danger signal.
3. Massage a cure for muscle fatigue.
4. Fatigue from worry.
5. Exercise a cure for brain fatigue.
6. Sleep and play.

III. First Aid and Safety First.

IV. Stimulants and Narcotics.

Same as Seventh Grade, Second Semester.

1. Candy.
2. Autointoxication.

Grades 7, 8, 9

Ninth Grade—First Semester.

I. Brain:

1. Structure.
2. Work:
 - a. How messages are received and sent.
 - b. Spinal cord.
 - c. Sympathetic nervous system.
 - d. Memory and thinking.
 - e. Habit formation.
 - f. Brain fatigue.

Physical Culture.

Same as in eighth grade with greater emphasis on accomplishment. Also more intensive study of organized games, rules and technique. Practical field work and demonstrations in First Aid and Life Saving.

II. Absorption and Assimilation.

(Review of digestive system as given in first semester of 8th year.)

1. Osmosis.
2. What the body does with food:
 - a. The work of the villi.
 - b. Waste matter.
3. Proper nutrition and malnutrition:
 - a. Value and choice of foods.

III. Speech Organs:

1. The voice.
2. Speech defects.
3. Hygiene of the voice.

Ninth Grade—Second Semester.

I. Germs and Diseases:

1. Germs and infectious diseases.
2. Disease "carriers":
 - a. Humans.
 - b. Animals.
 - c. Insects.

3. Water supply.
4. Milk supply.
5. Health departments.
6. Community health programs.

II. Ventilation:

1. How to ventilate.
2. Arithmetic of ventilation.
3. Evil effect of bad air.
4. Home and school ventilation compared.

III. First Aid and Safety First.

Lectures and demonstrations by competent men and women.
Actual classroom practice.
Swimming and life saving where possible.

IV. Stimulants and Narcotics.

Same as in the eighth year, with intensive study of tobacco and narcotic drugs.



OUTLINE
OF
HUMANE EDUCATION

HUMANE EDUCATION

Seventh Year

The likeness of dumb animals to ourselves:

That is true of their bodies, their minds, of their physical feelings and of their spiritual feelings. Anyone who doubts their having minds and spiritual feelings merely proves that he has not observed them much and does not understand them.

They differ from us and from each other in the form and appearance of their bodies, in their food, their habits of living, in their intelligence and in their importance in the scale of life as compared with man. We do not know how far they go or can go in many ways. They cannot speak as we do in joined-together sounds or words. But none of these things in which they differ from us are very important.

They all need to eat and drink and rest, they all feel pain and pleasure, they are all happy and unhappy as far as we can tell. In their higher forms they undoubtedly think and reason exactly as we do only not so far. They undoubtedly have the same feelings we have.

These are the fundamental, underlying things and in all of them we and they are alike as far as they go. Whether they are shaped like us or like fishes or horses or birds or whether they are covered with hair or scales or feathers, whether they can speak as we do or have only cries and inarticulate sounds—all such things are superficial and unimportant. They are merely the clothing of the living thing within them and that is like us and ought to be treated as we feel we ought to be treated. Does anybody doubt all this? Let him think a minute.

Don't they all suffer from hunger? Thirst? Cold? Heat? Pain? Fear? Scolding? Threats? Bitter words? Loneliness? Disappointment? Discouragement? Lack of liberty? Dislike? Jealousy? Disapproval? Regret? Grief? Certainly they do—the higher forms of dumb animal life do, as all of us who know them well know. Maybe the lower forms do also, only we do not know it. How many causes of unhappiness do we suffer from outside of those mentioned? Very few.

Don't they all enjoy Comfort? Kindness? Love? Health? Freedom? Company? Gentleness? Wants satisfied? Soft Words? Certainly they do. How many other things do we find happiness in? Not many.

Don't they love and care for their children just as human mothers do? Fight and die for them if need be? They ask us for what they want, don't they? Often we do not understand them and far more often we don't pay attention to them, but that's our fault, not theirs. Suppose nobody gave us what we ask for and suppose nobody paid any attention to what we said—after a while we would stop asking, wouldn't we? and stop doing anything to attract attention, wouldn't we? because we would think it wasn't any use. Well, why isn't it the same with them? Whenever a dumb animal tries to attract our attention it wants something and it is our duty to find out what it is. Whenever a dumb animal acts in any unusual way there's a reason and it is ours to find out what the reason is. Hundreds of thousands of lives have been saved because dumb animals gave the alarm when the house was on fire or when robbers were about or when danger was ahead or when roads and bridges were unsafe or when any one of many other things threatened—but if no attention had been paid to their conduct they could not have warned us.

Children know almost all the facts herein stated. Let them illustrate and apply them by their own experience and in their own experience. It must be left to the teacher.

Eighth Year

Dumb animals in law and in fact: Law is the foundation of governments and establishes the rights of all of us, of every living creature. If properly enforced it protects us in those rights.

In law a person is defined as having rights while a thing has none. Anything not alive is called a thing because it has no rights.

Under the laws of Colorado and of most other states and all civilized countries dumb animals have rights established by law—very plain, distinct and definite rights, as well defined and in the main as extensive as the rights of humans to fundamental things. The legal statement of the rights of dumb animals covers all the fundamental rights of humans and if it were fully and intelligently enforced would give protection to practically all human rights.

The law of Colorado states: "In this act the word animal shall be held to include every living dumb creature; the words torture, torment and cruelty shall be held to include every act, omission or neglect by which unnecessary or unjustifiable pain or suffering is caused, permitted or allowed to continue when there

is a reasonable remedy or relief." Think this over and study it. It will be seen that it would cover almost every conceivable injury from which we as humans could suffer if caused by someone else. Yet it is the law protecting dumb animals here and in many other places. Moreover, it protects the smallest and most humble as well as the highest and most important of dumb animals—all alike.

It follows that all dumb animals are persons in law—however reluctant we may be to admit it or however startling it is to know it. Every sheep in the flock, every horse in the herd, every bird in the forest, every insect or reptile, even, is a person in law, exactly as we are ourselves. We have already seen that they are persons in fact. That is, each one of them among the higher dumb animals is different from all his fellows, has traits and disposition and faculties which make up what is called personality. No two horses are alike, no two dogs—we know that from observation—that is what is meant by personality among them as among people. Probably, among the lower and less developed dumb animals individuals are still different, also, only we do not know enough to know it.

Now, then, if dumb animals are persons as matter of fact and of law, too, just as we are; if they think and reason, just as we do, only not so far; if they feel, just as we do; if they suffer and enjoy just as we do—if they have all our rights and all our faculties—and it appears that they do, only not in the same degree—why do they not stand on the same plane we do except that they are not so important in the plan of life? There is no other conclusion possible.

Some persons deny that they have reason and say all they have is instinct and cannot think. Reason may be defined as the faculty of making the step from cause to effect or from effect back to cause, or consciously doing things because of the end to be attained, whereas instinct is the faculty which makes us do things without any conscious reference to the result. For instance, it is said that the reason a dog turns round and round before lying down is that his far ancestors did so to make a bed in the grass and he still does so as a matter of instinct when there is no longer a reason for doing so. Eating, drinking and sleeping are also instinctive. Those who deny reason to the dumb animals say that instinct is all they have.

But when the cat mews at the door or the dog scratches on it they think or reason that if they do someone will come and

open it—there were no doors in the far-off jungle when the instinct of turning round and round to make a bed was developed. No: whenever any dumb animal or any human does something with a distinct view to obtaining a certain result that is pure reason, pure thought—nothing else can be made of it. Many like instances can be given.

Let the class think over these things and bring instances and illustrations in their experience.

In what respects do dumb animals differ from us humans?

Is their position in life more like that of children than of adults? If so, why?

If you are hungry and your horse or dog is hungry, too, which should be fed first, you or they? Why?

If you have a chance to take advantage of somebody in a way he does not know of or cannot protect himself against, what should you do? Why?

Give all the reasons why you should not overwork your horse. Give all the reasons why you should not hurt your dog in any way. Why you should not throw stones at birds. At cats or dogs. Why you should keep anybody else from injuring dumb animals. Why you should unnecessarily injure insects. What are your rights? Have you any rights your dog does not have? What are they? Anybody else's dog? Any dumb animal you do not own? What obligation of a dumb animal does ownership of him impose in addition to what you owe to him anyway? What obligation do you owe to every living dumb creature? Why? If you have a chance to take advantage of somebody why not do it? Give all the reasons. What do you mean by taking advantage of somebody? Give as many illustrations as you can. What obligation do you owe to everybody? Do these obligations differ in any way and if so how? What do you think your rights are? Can they be taken away from you justly for any cause? When? Why? What are the rights of a dumb animal? Can the rights of a dumb animal be taken away from him justly? When? Why? Then when and why in general terms are we justified in taking away the rights of either or both? Do we owe justice, fairness, kindness, due regard for all their rights, understanding and sympathy to all the creatures of the living world, both human and dumb? If so, why? If not, why? When we speak of dumb animals which word do we put stress on? We are all animals, are we not?

If everybody was kind, kind all the time to everybody and every creature—if everybody was fair and just all the time to every creature—if everybody treated every other creature all the time as he would like to be treated himself—if any or all these things were true would there be any Crime? Any Jails? Any Prisons? Any Wars?

If everybody stopped using bitter words and having mean, unfriendly feelings in his heart—would there be any hates and quarrels and fights any more?

If everybody all the time spoke softly and felt kindly and acted in the same way—would there be any enemies any more?

If all of us all the time tried to understand all the dumb animals and tried to get for them anything they want and treated them like our little brothers and sisters—wouldn't they love and trust us instead of being afraid of us? And wouldn't they pretty soon all be our friends and servants instead of our slaves and our victims, as so many of them now are?

Well, then, what about turning over a new leaf and doing the best we can to understand every creature, dumb animal or human; to be good to every one of them; to make them understand that we are their freinds and are glad to do anything we can to make them happy?

OUTLINES
OF
PENMANSHIP, SPELLING,
ART, MUSIC

PENMANSHIP**Grades Seven and Eight**

For those who have reached and maintain in all their work the standard set for Grade VI, no formal drill is needed.

For those not having reached the standard set for Grade VI, special instruction following the course outlined for Grade VI should be arranged. Excuse them from this work as soon as they reach the standard.

There should be an occasional grading of all the written work in other subjects to determine whether a satisfactory quality is being maintained.

Several times a year, a formal test should be given to measure speed and quality.

SPELLING

(See Elementary Course of Study.)

ART**Free Hand Drawing.**

The purpose of the instruction should be to furnish opportunity for drill, in drawing familiar forms, singly or in simple groups. Proper methods of drawing should be featured and the instruction illustrated by many examples.

Lettering.

Secure ability to letter with clearness and precision. A well-formed alphabet should be learned. The making of posters, show cards, announcements, and so forth, should reflect a knowledge of proportion and good spacing.

This Grade Nine Should Know.

(1) How to make simple and harmoniously colored designs for a variety of uses suggested by the interest of the pupils or school.

(2) They should be able to sketch the form of simple familiar objects, singly or in groups of two or three, from description or dictation and from the objects themselves with emphasis placed on rapidity of execution and workmanlike technique.

MUSIC

The aims of the music work in the Junior High School should be to provide a means of self-expression through the medium of vocal and instrumental music, by training the pupil to take part in the life of the community by performances, thereby raising the tone and quality of music and encouraging the love for a better class of music. It should also develop an appreciation of the best in music.

The main divisions of the subject matter with objectives of each division are as follows :

Chorus. To develop ensemble singing, cultivate taste for better class of music through the study of oratorio and operatic choruses, to encourage class singing at regular assemblies and other functions, and to discover voices for quartet and glee club performances before the public and at music contests.

History and Appreciation. To make the pupil familiar with the beginnings of the art of music and its development to the present day. To give better understanding of works of old masters as well as the new. To give him a knowledge of musical instruments, past and present, and to make him an appreciator and listener whether or not he is a performer.

Band, orchestra and work in harmony may also be given if time permits.

OUTLINE
OF
COMMERCIAL SUBJECTS

COMMERCE

Aims

1. To aid the pupil to discover and begin to develop his ability along commercial lines.
2. To give the pupil who may leave school early, basic training which will be of service to him in whatever line he may find himself located.
3. To give introductory vocational training in so far as possible for those commercial occupations which surveys show are entered by boys and girls who leave school during junior-high-school years.
4. To make future commercial education more vital and meaningful regardless of the length of time it may be pursued.

Certain points of training and qualities of character were emphasized as essential. To write a good legible hand, to figure accurately, to handle a typewriter fairly well, to know the fundamentals of accounts, and the desirability of such qualities as courtesy, honesty, initiative, neatness, and responsibility.

Organization

Grade 7A

Business Training.

Rapid calculation.

Indexing, Elements of

Penmanship.

Typewriting.

Grade 8B

Business Training.

Business ethics.

Indexing and filing.

Money, United States.

Local geography.

Penmanship.

Typewriting.

Grade 8A

Business Training.

Banking.

The Store—its value to the community.

Payroll.

Penmanship.

Typewriting.

Grade 9B

Bookkeeping (Two-thirds of time).

Balance sheet.

Profit and loss statement.

Accounts.

Trial balance.

Journalizing.

Posting.

Penmanship.

Typewriting (One-third time).

Grade 9A

Bookkeeping.

Books of account.

Closing of books.

Practice set.

Opening entries.

Penmanship.

Typewriting.

BUSINESS TRAINING

Business training implies the information and training essential to the young student if he is to become a useful factor of the community and the business world.

It is to be assumed that pupils electing a commerce course in junior high school intend to enter the business field. Accuracy in computations, ability to write a legible business hand, and background of general business information are the foundation requirements of success in the smallest business organization. These should be given to the pupil in a beginning business course by such methods and manner as will connect his interests with the work done.

The importance of speed and accuracy should be emphasized as being absolutely essential in making satisfactory business calculations.

Indexing gives the pupil an idea of the systematic care of business papers.

Aims

1. To give the pupils something of commercial value even though they may not continue with the commercial work.
2. To find out if pupils electing this course have business inclination.
3. To make this a good foundation course for the work which is to follow.

Rapid Calculation

- a. Horizontal and vertical addition.
- b. Subtraction.
- c. Combination of addition and subtraction.
- d. Multiplication.
- e. Combination of subtraction and multiplication.
- f. Division.
- g. Combination of addition and division.

Indexing, Elements of

Indexing is the essential feature in filing, as only by doing indexing accurately and carefully does a filing system become valuable to a business concern.

A. Methods.

In order to meet the needs of the individual and business world, various methods of indexing are in use, such as:

1. Alphabetic.
 - a. Dictionary.
 - b. Directory.
 2. Numeric.
 3. Geographic.
 4. Subject.
- B. Discussion of methods of indexing.
- a. Purpose.

To arrange words and names in strictly alphabetic order so that information concerning them can readily be found. This means Aa; Ab follows, and so forth, throughout all the letters of the alphabet.

- b. Methods of procedure.

(1) Dictionary method.

To arrange words or names in dictionary order, alphabeticizing must be done to the last letter in the word. The cancellation method brings out quickly and clearly the alphabetic place of a word.

~~Whit~~more, ~~Whit~~man

The above illustration shows that by the method of cancellation the name "Whitman" precedes the name of "Whitmore," as of the letters not cancelled in the two names "a" precedes "o" in the alphabet.

Grade Eight

Business Ethics

Training for citizenship should play a large part in the training of commercial students. Boys and girls should understand that they are a part of society and as such have obligations to it. They should learn that they are good citizens in their community in so far as they are loyal and industrious workers at their own work. Teach the ideals as the occasions arise.

- A. Suggestive qualities to develop good business habits.
1. Honesty.
 2. Loyalty and cooperation.
 3. Courtesy.
 4. Neatness.
 5. Industry and ambition.
 6. Punctuality.

- B. Talks on business ethics by prominent business men of the community, and the use of appropriate incidents will help to impress on the minds of the students the importance of having business ideals.

Indexing and Filing

Continuation of the indexing and filing outlined for the preceding grade.

Filing.

Essential equipment.

- a. Filing cabinet.
- b. Box or envelope files.
- c. Paper cutter.
- d. Everlasting window tabs.

Money, United States

- A. History of money.
1. Barter.
 2. Metals.
 3. Coinage.

Currency

- B. Kinds of currency.
- (1) United States Notes.
 - (2) Gold certificates.
 - (3) Silver certificates.
 - (4) Treasury Notes.
 - (5) National Bank Notes.
 - (6) Federal Reserve Bank Notes.
 - (7) Federal Reserve Notes.
- B. Substitutes for money.
1. Checks.
 - a. Personal.
 - b. Cashiers.
 - c. Travelers.
 2. Drafts.
 3. Postal money order.
 4. Express money order.
- C. Making change.

Local Geography

- A. Industrial district.
 - 1. Wholesale.
 - 2. Retail.
- B. Financial district.
 - 1. Banks.
 - 2. Stock or Bond selling companies.
- C. Government buildings.
- D. Public service companies.
- E. Principal arteries of trade.

The Store, Its Value to the Community

The child's natural approach to the business world is through the store.

Buying and receiving goods for store.

- 1. Wholesale buying.
 - a. Advantages.
 - b. Trade Discount.
 - c. Quantity discount.
 - d. Fluctuation.
 - e. Cash discount.
- 2. Transportation of goods.
- 3. Preparing goods for sale.
- 4. Selling the goods.
 - a. Clerk at counter.

The sales clerk is the chief factor in the selling department. In order to be successful he must know his stock, show interest in his customer, and cultivate poise and a cheerful disposition.

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Penmanship

Time: Fifteen minutes daily.

Aims

1. To help pupil acquire a regular rhythmic movement which is necessary in order to make writing easy and of greater endurance. The progress of the pupil depends upon its constant application.
2. To aid pupils to make good forms which are pleasing to the eye, easily read and such as the business world is willing to pay for.
3. To help pupils acquire by practice the speed necessary for any commercial work which might require skill in writing, so that a slow movement will not retard him.

Methods

1. Drills to give freedom to muscles.
2. Drills to control muscles.
3. Drills to acquire correct forms.
4. Drills to bring letters and figures down to a uniform commercial size.
5. Drills to aid in developing speed.
6. The use of the phonograph is a great aid in securing rhythm.

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Palmer, A. N.

TYPEWRITING

The use of the typewriter in the business world is practically universal and its efficient operation has rapidly become a business necessity. Skilful manipulation of it depends on well-formed habits. The beginning of these habits can be acquired by young students of junior-high-school age and continued practice in them will lead to a high degree of efficiency in this art.

Typewriting has both educational and vocational value. It helps to develop not only such qualities as accuracy, concentration, neatness, responsibility and control, but aids in spelling and syllabication. It offers unusual opportunity for satisfying the pupil's desire for self-expression. To the pupil of low mentality the opportunity to write on the typewriter is of particular value as it gives him a sense of accomplishment and joy in his work. To the pupil of high mentality it means a better organization of notebook material and a pleasure in being able to present in compact, attractive form any assignment requiring a return of work in written form.

Its vocational value is obvious. According to information obtained from interviews with business people pupils leaving school at the end of eighth or ninth grades who have had careful training in typewriting have opportunities for receiving better positions at better pay.

It is not the purpose, however, to make typewriting in junior high school exclusively vocational nor to attain great skill, but rather to help establish good habits, give information as to its commercial value and make it a course of value to those who wish to continue this work in senior high school.

General Directions for Teaching Typewriting

Methods. Good results have been obtained by each of the following methods and the teacher should consider the classroom procedure as more important than the technical approach.

The first method teaches the fingers to be on the guide or home position keys, but takes the stronger finger first and drills on the letters that it strikes. For example, jhfg juyj frtf jmnj fvbf. All first-finger keys are mastered including the numbers, then the second finger is taken up in the same way. and the others follow in rotation. This method takes advantage of the child's natural tendency to use certain fingers by preference, and gives him confidence in attacking the problems presented later in the use of the fingers not so easily controlled. The course of junior-high-school typewriting is based on this method.

The other method is to teach the use of the guide or home position keys first. The hands are placed in position and all the fingers are used. For example: ;lkj asdf are drilled upon. After these home-position keys are learned the other first-finger keys are taken in relation to the home position, then the remaining second-finger keys, third-finger, and fourth-finger keys. The advantage of this method is that it trains the use of all the fingers at the same time,

and the position of the fingers on the guide keys becomes a habit, not an effort.

Charts. It is well to see that one finger has been mastered before going on to another and to be certain that the pupil has a clear mental picture of the location of the keys. A very splendid way to check a pupil's knowledge of the keyboard is to have him make and fill in a blank keyboard.

Placement. It is very essential that all work be arranged on the paper in a pleasing and business-like manner. Side margins must be even and the work well centered on the page. This should be emphasized from the very first.

Rhythm. Rhythm should continually be stressed because it leads to an even touch and later to speed. It may be taught by the teacher keeping time or by music. Music is especially good as it adds interest to the class and helps the pupil to write each letter, difficult or easy to reach, at the same rate. Care should be taken in the selection of the proper pieces for the victrola.

Time Devoted to Drill. Fully half the period should be spent in drill directed and supervised by the teacher. However, this will vary, depending on the type of work and the ability of the class. The remainder of the period may be devoted to individual work.

Checking of the Work. Pupils should check their own work before handing it in. This includes both drill and permanent papers. Errors are allowed depending on the work and the experience of the pupils. No erasures or strike-overs should be permitted.

Keeping the Class Together. For all drill work the class should be kept together but text books should be provided for individual work. This will stimulate greater interest and give the pupils an aim in their work, a definite objective toward which they will strive.

Grade 7A

I. Aims

The work of this grade is planned:

To give general information on the typewriter and its commercial value.

To give instruction on the parts of the typewriter as the necessity for the use of these parts arises.

To aid in forming habits of correct position of body and hands.

To help develop responsibility through the care of the machine, the desk, and economical use of paper.

II. Classroom Procedure

The first typewriting lesson should be a general explanation of the typewriter and the method of operation. All work should be closely supervised by the teacher in order to give the necessary help and to be sure that the correct habits are being formed. As the presentation of work from the board helps to offset the natural tendency of the child to watch the keys, it seems advisable not to place a textbook in the hands of the pupil in this grade.

A. The machine.

Teach the mechanical features of the machine that are necessary in order to begin writing.

1. Correct insertion and removal of paper.
2. Use of platen.
3. Use of the paper release lever for straightening paper.
4. Shifting of the carriage.
5. Use of carriage release lever.
6. Use of marginal stops.
7. Use of space bar.

B. Posture.

Correct position at the machine and position of the hands and arms should be illustrated to the class by the teacher.

C. Finger action.

It is of the utmost importance that correct finger action be taught from the beginning. To develop a staccato stroke (a short and snappy stroke) and independent finger action, have the pupil go through drills without using the typewriter.

D. Drills.

Explain how to find home-position keys and thoroughly drill pupils to place fingers on right keys by touch.

1. First finger.

Drill on all first-finger letters in their relative positions to "j" and "f" until pupil becomes fairly familiar with location of each first-finger letter. It is advisable to write one or more lines of each group.

Group One

jjjj-jjjj (Complete line)
 ffff-ffff
 jjff-jjff
 jfjf-jfjf

Group Two

juj-juj (Complete line)
 frf-frf
 jmj-jmj
 fvf-fvf

Group Three

jyj-jyj (Complete line)
 ftf-fty
 jnj-jnj
 fbf-fbf

Group Four

jhj-jhj (Complete line)
 fgf-fgf
 jhfg-jhfg
 jfgh-jfgh

Group Five

First-finger words may be used to add interest and to help develop rhythm. Select any ten of the words listed below and write a line of each:

fun	mum	rub
jug	bum	nut
fur	hut	mug
try	rug	hub
gum	bug	buy

2. Second finger.

As it is the tendency for the pupil to use the wrong fingering when new finger letters are introduced, special care should be taken to aid him in forming correct habits of fingering.

Group Six

Exercises to develop location and check for finger movement.

jkkkj-jkkkj (Complete line)
 fdddf-fdddf
 jkikj-jkikj
 fdedf-fdedf

Group Seven

jkik-jkik (Complete line)
 dede-dede
 kn,k-kn,k
 fved-fved

Group Eight

jjkk,,kkjj-kkjj,,jjkk (Complete line)
 ffddecdff-ffddecdff
 jkifde-jkifde
 jk,fde-jk,fde

Group Nine

Exercises to check for rhythm and faulty touch as illustrated
 in:

Ice-ice (Complete line)
 nice-nice
 rice-rice
 ing-ing
 king-king
 ring-ring

Group Ten

Select any ten of the words listed below and write a line of
 each:

kick	ever	very
even	fire	give
five	tire	dent
fine	died	fret
much	kind	dime

E. Required assignments:

All exercises should be typed on half sheets of paper with regular heading written in long hand. Neither strike-overs nor erasures are permissible. No work should be accepted unless the work is well placed on the paper.

F. Measurement of progress:

At the completion of this course the teacher should measure the progress of the pupil by comparing his ability with a standard requirement.

First, he should be able to fill in correctly from memory the first and second finger letter keys on a blank key chart.

Second, he should be able to find home position by touch.

Third, he should show a tendency to use correct fingering and to write without looking at the keys.

Fourth, he should show improvement in touch, rhythm, and stroke.

Fifth, he should complete required assignments.

Eighth Grade

The work of the previous grade was given to enable the pupil to form a general idea of the typewriter and its manipulation. The work of the eighth grade should give him a more comprehensive idea of the typewriter and a more pronounced skill in its manipulation and should help him to decide whether or not he wishes to continue work in this line.

Aims—In order to develop more ability in the operation of the typewriter, the following aims should be kept in mind for this grade:

To review the parts of the typewriter and acquaint the pupil with additional parts as necessity arises.

To introduce all characters of the keyboard.

To work toward invariable fingering: that is, certainty that the right finger strikes the correct key in every instance.

To give continual drills in staccato stroke, even touch, and rhythm.

To stress the importance of neatness.

To help develop ideals in honesty and responsibility through guidance in checking work.

Grade 8B

I. Classroom Procedure:

A. The machine:

1. Review the parts of the typewriter as outlined under grade 7A.
2. Teach the adjustment of line spacer.
3. Give pupil greater responsibility in the care of the machine.

B. Posture:

Keep before the minds of the pupil the importance of correct position of body, hands, and arms.

C. Drills:

The importance of drill work is apparent. Every lesson should begin with drill on review combinations followed by practice on new combinations which are more difficult

D. Measurement of progress:

As in the previous grade the teacher should at this point measure the progress of the pupil.

First, he should be able to fill in first, second, and third finger letter and number keys on a blank key chart.

Second, he should show a marked improvement in the use of the touch system.

Third, he should be able to write with ease simple words involving the use of first and second fingers.

Fourth, he should make few errors in fingering.

Fifth, he should, by the appearance of his papers, show better muscular control as to stroke.

Sixth, he should complete a required assignment from textbook. (See suggestions to teachers.)

Grade 8A

As the following work is a continuation of grade 8B, review posture, parts of the machine, and finger drills as given in previous outlines.

The use of the shift key, shift lock, back spacer, ribbon switch, and ribbon position indicator should be introduced in this grade.

I. Classroom Procedure:**A. Fourth finger drills.****B. Shifting drills:**

1. Capitals.

2. Signs.

3. Compound words:

trade-mark, man-of-war, ex-president, by-laws, labor-saving.

4. Syllabication:

com-mis-sion, ac-cu-ra-cy, ad-van-tage, gov-ern-ment.

C. Dictation:

Dictation is an important factor in helping to fix the position of the letters of the keyboard in the mind of the

pupil. Only short monosyllabic words should be used in this work.

from	night	will
page	such	never

D. Measurement of progress:

In determining the progress of the pupil at the end of this grade careful attention should be given to his knowledge of the typewriter, and his aptitude for the work.

First, he should be able to make a blank keyboard chart and fill in all letters and figures.

Second, his stroke should be such that his work is free from shadows.

Third, he should assume the responsibility of carefully checking his papers before handing them to the instructor.

Fourth, he should be able to take very simple word dictation.

Fifth, he should attack his work with determination and take pride in handing in neat and accurate papers.

Sixth, he should complete a required assignment from textbook. (See suggestions to teachers.)

NOTE—At this point the teacher has a splendid opportunity to help the pupil decide whether or not it is advisable for him to continue typewriting.

Ninth Grade

As the teacher naturally considers the average ninth-grade pupil capable of doing more intensive and better work, she should expect those who have acquired some muscular control and the fundamentals of key location to be able to develop some skill in his work.

Aims:

In order to meet the pupil's increasing capabilities and a new evaluation of typewriting the work of this grade is planned.

To aid in securing good command of the keyboard with a fair degree of accuracy.

To train in centering the work on the paper in regard to margins at the sides, top, and bottom.

To aid in securing alertness and better coordination of mind and muscle.

To show the commercial value of habit the ability to typewrite.
To aid in developing the ideals of honesty and responsibility
to checking his own work.

Grade 9B

I. Classroom Procedure:

A. Centering:

The importance and pleasing effects of good centering
should be stressed with the mechanical processes of spacing.

1. Titles of books and plays:

KING LEAR

THE OREGON TRAIL

2. Headings and subheadings:

BASEBALL

World Series

1921

3. Poetry:

Day after day, day after day,
We stuck, nor breath nor motion;
As idle as a painted ship
Upon a painted ocean.

—Coleridge.

B. Drills:

1. To review the location of numbers and symbols.
2. To eliminate false motion and loss of time in returning the carriage.
3. To give practice in phrase dictation:
Yours truly payable to
in your letter in favor of
4. To use all the letters in the alphabet:
The zeal of the five boys won extra praise from
the quick old judge.

C. Measurement of progress:

The progress of the pupil is measured by his ability to
follow specific instructions and by the quality of his work.

First, he should show good judgment in arranging his
work on the paper.

Second, he should be able to copy simple paragraphs
with a fair degree of accuracy.

Third, he should be able to take very simple and short phrase dictation.

Fourth, he should complete required assignments from the textbook. (See suggestions to teachers.)

Grade 9A

I. Classroom Procedure:

A. The machine:

The new features of the machine which are to be introduced at this time:

Insertion of ribbon.

Tabulator rack.

Tabulator stops.

Tabulation key, or keys.

B. Tabulation:

1. Suggestive drills:

fix	fixes	fixed	fixing
tax	taxes	taxed	taxing

CAPITAL	STATE
Denver	Colorado
Salt Lake City	Utah
Sacramento	California
Albany	New York

Cities of the United States in Order of Size

(Over four hundred thousand)

NAME OF CITY	POPULATION, 1920
1. New York, N. Y.....	5,620,048
2. Chicago, Illinois.....	2,701,705
3. Philadelphia, Pa.....	1,823,779

C. Dictation:

Dictation is of value in securing quick response, co-ordination, and alertness. It brings to the pupil the value of being able to spell well. Dictation should first start with words and then gradually go into phrases and sentences. Alphabetical sentences can be used to great advantage in strengthening the knowledge of the keyboard. For the more advanced pupil interesting selections may be given.

D. Punctuation:

Drill should be given on spacing following the comma, period, exclamation mark, question mark, colon, semicolon, dash, hyphen, parentheses, quotation marks, abbreviations, and initials.

A practical way to handle an effective drill on punctuation is to take up one punctuation mark at a time, explain it and then dictate sentences and have the pupils insert the punctuation marks where they should go. Class discussion and correction to follow.

E. Paragraph work:

Longer and more difficult paragraphs may be used to give training in accuracy and command of the keyboard.

F. Acceleration:

Very simple tests should be given in the latter part of the ninth grade to add interest and acquaint the pupil with the factors entering into speed work; such as,

We will do so. The hogs sold well. We can never see. Look for the silver lining.

G. Check work:

A definite attempt should be made to develop the ideal of honesty and responsibility in the checking of papers. The idea that it is necessary for anyone engaged in any kind of typing work to find errors before the paper is taken out of the machine should be held up to the pupils from the start and a pride should be developed to the ability to detect mistakes. Accuracy should be stressed at all times, but it is more important that each pupil should put in a large part of the period in covering whole drills and whole exercises to the best of his ability than to stress no errors to the extent of having the pupil remove the paper and start over whenever he makes a mistake. The first part of the exercise may be written twenty times and the last part but once if such a procedure is used. Moreover, it leads to dryness in the work and discouragement on the part of the pupil. By having the pupil check his work he will gradually develop responsibility in finding his errors.

NOTE—Pupils should be instructed on general typing information and business forms and practices.

H. Measurement of progress:

When a pupil has completed the junior-high-school course in typewriting he should possess the basic fundamentals.

First, he should have a working knowledge of the keyboard.

Second, he should use the touch method and have good striking and perfect fingering.

Third, he should know how to arrange work well on the paper.

Fourth, he should know the parts and uses of the typewriter.

Fifth, he should write with rhythm and be able to copy very easy material with considerable accuracy.

Sixth, he should complete required assignments from the textbook. (See suggestions to teachers.)

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BOOKKEEPING I

It is very probable that the majority of students will some day either be conducting a business for themselves or working for someone else. The pupil should understand that in order to conduct a business successfully certain information is necessary; reports and records in connection with current commercial problems must be done accurately and systematically.

Bookkeeping will help him to understand the needs of the business and to aid him to know just what is taking place in it.

In Bookkeeping I most of the time should be spent in the development of principles. Laboratory work in this connection

will be a minor part of the course. The course in the junior high schools is identical with the first unit of senior-high-school bookkeeping.

It is the object of Bookkeeping I not only to have it a foundation course, but

1. To give as clear a picture as possible of the kinds of businesses and of their organization and operation.
2. To teach the analysis and preparation of simple financial statements.
3. To teach the theory and use of some of the fundamental accounts.
4. To drill on the principles of arithmetic involved in the elements of simple bookkeeping.
5. To teach the theory and application of books of original entry.
6. To develop a single proprietorship type of business organization.
7. To bring out the value of systematic records as being the source of information necessary to the proprietor.
8. To show that the art of bookkeeping is composed of many units.
9. To show the value of bookkeeping in determining the source of health, or gain, and the source of disease, or loss, in business.

Grade 9B

I. Content:

A. Study of Business:

The study of business may be best approached by a series of suggestive questions, as they will open the subject to the pupil and bring about a general discussion.

- a. Name several types of business and a suitable location for each.
- b. What is a commercial organization?
- c. What is a financial organization?
- d. Name and give location of several examples of each.

B. Organization of Business:

1. Is an investment essential in organizing a business?
2. If you were starting in business, what investments other than cash could you put into it?

3. If you were to organize a business, what kind of employees should you most desire?
(Stress this section and consider it thoroughly from the standpoint of both employer and employee).
4. Name some of the different equipment necessary to begin a business.

C. Operation of Business:

1. What is the mutual relation between a business organization and a bank?
2. How does a business organization place its funds in the bank for safe keeping?
3. How does a business organization use its funds after they are placed in the bank?
4. For what purpose is this fund used?
5. Is it necessary to buy and sell in order to carry on a business organization? Support your answer by examples.
6. Are expenses essential in the operation of business?
7. Give nature of some of the essential expenses.
8. Do expenses increase or decrease the owner's profit?
9. Why do some business organizations succeed?
10. Why do some business organizations fail?
11. Would written records be necessary to operate a business?
12. What written records would be required?
13. What information do these records give the owner?
14. How may this information be used?
15. How could a proprietor determine the amount of sales?
16. How could a proprietor determine the cash receipts?
The cash payments?
17. How could a proprietor determine the actual cash on hand?

D. Elements of Business:

1. Values owned:

The proprietor is interested to know the money value of property owned by his business; such as, his cash balance, merchandise in stock, delivery equipment, amounts due from customers, office supplies, and so forth.

Values owned are known in bookkeeping as assets.

2. Values owed :

The proprietor should also know the claims against the money values owned; such as, the amount due others. Such values are known in bookkeeping as liabilities.

3. Present worth :

Knowing the money value of what he owns and what he owes, the proprietor is able to determine his present worth. That which the proprietor owns less that which he owes is called his present worth or proprietorship. If at any time the total liabilities should exceed the total assets the business is said to be insolvent.

E. Balance Sheet :

Due to his many duties, duties which deal with the general management of the business, the proprietor desires the information put in such form that it can be obtained very readily. He wishes to know the relation of assets, liabilities, and proprietorship, whether his assets have increased or decreased in proportion to his liabilities, what his net worth is and any other information concerning his financial standing. This information he receives in the form of a report called the balance sheet, which is a statement of the business showing a list of the proprietor's assets and liabilities or what he owns and what he owes.

1. Purpose :

- a. It enables the proprietor to see whether or not he has added to his original investment.
- b. By comparing the financial statements at different periods, the proprietor is able to judge the net results of his operations of the business and to plan for the future of the business.
- c. It enables the proprietor to know his credit standing. This is of value to him in case he desires to borrow.

2. Form :

The report form gives the necessary information to the proprietor more readily than other forms. This

form shows three distinct parts: assets, liabilities, and proprietorship.

F. Profit and Loss Statement:

Books are kept for the purpose of recording transactions and as a basis for the preparation of statements. Every business has certain accounts which indicate a profit or an expense.

1. Sources:

Profits and expenses come from three general sources:

- a. From the purchase and sale of commodities.
- b. From the current expenses, such as rent, salary, and so forth.
- c. From the expenses not incidental to the carrying on of a business, such as insurance, repairs, taxes, and so forth.

2. Purpose:

- a. To show the amounts and sources of all profits and expenses, including the gross profit on sales, the object being to find the net profit or the net loss for the period.
- b. To show the result of past operations.
- c. To aid the proprietor in planning for the future.

3. Content:

In discussing the content of the Profit and Loss Statement, the meaning of each item in the statement should be taken up, not in the order as it appears on the report, but as it enters into the conduct of the business.

- a. Purchases, i. e., goods bought to be sold at a profit.
- b. Sales.
- c. Merchandising Inventory.
- d. Cost of Goods Sold.
- e. Gross Profit.
- f. Expenses.
- g. Net Profit.

4. Form:

The form of the Profit and Loss Statement should be such as to give quickly the necessary information

to the manager for the management of his business. In order to do this it will contain all items in totals.

Laboratory Work

- (1) Much drill should be given in brief exercises involving both cash and purchases accounts.
- (2) Drill in balancing the cash account.
- (3) Drill in Arithmetic as applied in the purchasing of goods.

(b) Cash discount.

c. Sales account:

The purpose of the sales account is to show the amount of merchandise sold. The balance of the account shows the net amount of sales during the fiscal period and is shown as the principal item of income on the Profit and Loss Statement.

(c) Receipted invoice.

d. Expense accounts:

- (1) Classification of expenses.
 - (a) Selling expenses.
 - (b) Administrative expenses.
- (2) Expense inventories.

e. Proprietorship accounts:

- (1) Capital account.
- (2) Proprietor's personal account.

H. The Trial Balance:

Emphasis has already been placed on the equality of debits and credits. We now take up the method by which this equality is tested at periodical intervals. This equality exists because the recording of the transactions in their respective places under the proper title involves an exchange of equal values.

1. Methods:

There are two methods used to determine the Trial Balance:

- a. By showing the total debits and total credits of each account.

- b. By showing only the balance of each account.

Note.—Emphasize the fact that the Trial Balance does not prove the accuracy of the entries made—it is merely a device to check clerical error.

2. Suggestions for laboratory work:

- a. Give individual accounts and have class prepare them for taking a trial balance.
- b. Combine the accounts and make a trial balance.
- c. Show how to arrange the various accounts of the trial balance.
- d. Show the relation between the arrangement of the accounts of the trial balance and the making of a Profit and Loss Statement and Balance Sheet.

I. Laboratory work:

The laboratory work should include anything that has been worked up to this point, involving preceding accounts, trial balance and statements.

J. Journalizing:

Books, known as Journals, are kept for recording daily business transactions. The transactions are dated, and analyzed as to debits and credits, the amount extended in the respective debit and credit columns and in the explanation column, the nature of the transaction which gave rise to the debits and credits to the accounts, are written.

Suggestion:

1. Show that the journal is the book of original entry.
2. Stress the need and purpose of a record of original entry and that the general journal is the simplest form of journal.
3. Explain the uses of the different columns and have the pupil practice ruling a journal page until he is familiar with it.

Suggestion:

After the pupil has become familiar with the principles of journalizing, simple exercises involving formal journalizing should be taken up. File these for future use.

K. Posting:

In transferring information from the records of original entry to the ledger care must be taken as to the correct dating, amounts, and folio pages, and placing debits on debit side and credits on credit side of the respective accounts.

Drill work:

Using the exercises under "Journalizing." Post the accounts. After accounts have been posted, total them and take a trial balance.

L. Other accounts:

The accounts studied thus far were developed with business done on a cash basis. Purchases of merchandise and supplies of different kinds were bought for cash. Sales were made on the cash basis only. In most every business it is likely that purchases and sales are made with the understanding of paying for them at some future time. This is known as doing business on credit basis, or as the term implies, to open "an account." The credit basis gives rise for further accounts: such as,

1. Accounts payable.
2. Accounts receivable.
3. Notes payable.
4. Notes receivable.
 - a. Business forms and arithmetic.
5. Interest accounts:
 - a. Interest paid account.
 - b. Interest received account.

Grade 9A**M. Books of account:**

Special journals are used because in every business there are many transactions of the same nature which occur frequently. If they are recorded in special journals, the work of entering and posting them is greatly reduced. Not only is the work of recording and posting reduced, but information can be obtained more easily. Emphasis should be made on each journal's nature and that the

equilibrium of debits and credits is maintained in the separate journals as well as in the general Journal.

1. Cash book.

Suggestions:

- a. Teach the cash book as two separate books, the cash received book and the cash paid book.
- b. Show the relation between cash received journal and cash paid journal, and that the two are combined into one book called the cash book.
- c. Show advantages of the cash receipts journal and the cash disbursements journal.
- d. Emphasize the fact that these are but subdivisions of the general journal and that the same principles govern their use and construction.
- e. Emphasize that each side of the cash journal is a complete journal.
- f. Show that the equilibrium of debits and credits is maintained in the separate cash journals as well as in the general journal.
- g. Enter all cash received on the debit or left-hand side of cash journal.
 - (1) Investments.
 - (2) Accounts receivable.
 - (3) Notes receivable.
 - (4) Interest received.
- h. Enter all cash paid on the credit or right-hand side of cash journal.
 - (1) Accounts payable.
 - (2) Expenses.
 - (3) Notes payable.
 - (4) Interest paid.
- i. To find the cash on hand, subtract total cash paid from cash received.

2. Purchases journal:

- a. Enter all purchases of merchandise to be sold:
Record the
 - (1) Date.
 - (2) Name of person from whom purchased.
 - (3) His address.
 - (4) Terms of invoice.
 - (5) Amount of invoice.

- b. To find the total purchases of merchandise for the period, total the amounts of the purchase book.
- 3. Sales journal:
 - a. Enter all sales of merchandise.
Record the
 - (1) Date.
 - (2) Name of customer.
 - (3) His address.
 - (4) Terms of the sale.
 - (5) Amount of the sale.
 - b. To find the total sales for the period, total the amounts of the sales book.

4. General journal:

Even though separate journals are used to record cash, purchases of merchandise, and sales transactions, there are certain classes of transactions that are recorded in the general journal.

- a. Opening entries.
- b. Current entries (which are not recorded in a special journal).
- c. Adjusting entries.
- d. Closing entries.

NOTE—Show relation of the adjusting and closing entries as made in the journal to the same entries made directly in the accounts.

5. Ledger:

The accounts of a business arranged in a systematic order are recorded in a ledger.

In accordance with the best accounting practice, continue the cash account even after the cash book is introduced. This is necessary if the student is to understand the journal nature of the cash record. There is no more reason for discontinuing the use of the cash account when the cash book is introduced than for discontinuing the sales account or the purchases account when the sales and purchases journals are introduced.

6. Order and method of posting:

- a. Post from general journal in the usual way; indicate not only folio pages but journal.

- b. Post from cash receipt book: credit accounts and debit total cash received. Indicate book by letter.
- c. Post from cash paid book: debit accounts and credit total cash paid. Indicate book by letter.
- d. Post from purchases journal credit each personal account and debit total merchandise purchases.
- e. Post from sales journal: debit each personal account and credit total merchandise sales.

Laboratory work:

Using exercises involving the various journals, post the transactions; make trial balances and statements.

O. Closing of books

1. Adjusting entries

At the time the statements are made it is usually found that the ledger does not show the true condition of the business. It is therefore necessary to make adjustments in the ledger by means of journal entries, before the ledger is closed. These adjustments involve mostly the inventories which are on hand.

a. General order of adjusting the ledger accounts:

- (1) Debit purchases and credit merchandise inventory (opening inventory).
- (2) Debit merchandise inventory (closing inventory) and credit purchases to bring final inventory on to the books.
- (3) Debit merchandise sales and credit purchases to show cost of sales.

2. Closing entries:

After the various accounts have been adjusted by means of journal entries, the next step is to find the balance of these accounts and transfer these balances into the Profit and Loss and Proprietorship accounts.

a. General order of closing ledger accounts:

- (1) Debit sales account and credit Profit and Loss Account for the gross profit on sales.
- (2) Credit all expense accounts an amount sufficient to balance them (the necessary adjustments having been made) and debit Profit and Loss account.

- (3) Debit all income accounts (the necessary adjustments having been made) and credit Profit and Loss account.
- (4) Debit Profit and Loss account an amount sufficient to balance it and credit the proprietor's personal account.
- (5) Debit the proprietor's personal account an amount sufficient to balance it and credit the proprietor's capital account.
- (6) Debit the proprietor's capital account with his present worth and credit his capital account for the next period with his present worth.

After the accounts have been closed they are ruled off and the ledger is again ready for the new fiscal period. Personal and note accounts are not closed, but just ruled off as they balance or parts of balance.

P. Practice set:

At this point a practice set, to show the application of the principles discussed in the preceding work, should be taken up. A grocery set is suggested or any other line of business with which the pupil is familiar.

1. Plan of set:

- a. Transactions involving two fiscal periods.
- b. Books of account. The transactions will be recorded in the general journal, purchases journal, cash journal and sales journal and posted into the general journal.
- c. Trial balance.
- d. Statements.
- e. Closing books.

The correct methods employed in this set will measure the ability and understanding of the pupil.

Q. Value of Elements of Bookkeeping (develop as a discussion unit):

1. Accurate way of keeping records will help students to keep club records.
2. Majority of pupils will some day either be conducting a business or working for someone else. Bookkeeping

will help them to understand the needs of the business and to know just what is taking place.

3. Pupils receive a general information as to the duties performed in the bookkeeping department.
4. Pupils with this training have better and more opportunities and it hastens advancement.
5. It is a preliminary course for the more technical bookkeeping.
6. There is a continuity of action and thought which is found in the business and which appeals to the pupil.
7. It broadens the pupil's outlook.
8. Pupil has become better acquainted with the more common business forms, so that he is able to use them.
9. It gives the pupil a general information in the bookkeeping field.

II. Measurement:

Suggestive tests have been worked in the content. Measurement of principles and understanding should be stressed over measurement of skill. The problem type of test lends itself especially well to testing ability to apply principles.

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TYPEWRITING I

I. Aims:

- A. To teach the pupil the parts of the typewriter and their uses as the necessity for the use of the parts arises.
- B. To teach all the characters of the keyboard.

- C. To form the habit of correct position of the body and arms.
- D. To develop invariable fingering; that is, certainty that the right finger strikes the correct key in every instance.
- E. To attain a staccato stroke and rhythm.
- F. To give a thorough training in accuracy and neatness in all typewritten work.
- G. To train in ideals of honesty and responsibility through guidance in checking work.

II. Content:

NOTE—This unit has been worked out in detail. It is essentially the same in principle as the work now covered by the junior high pupils. If this content is followed by both senior and junior high teachers it should be easy to obtain a good grouping in Typewriting II.

- A. In presenting typewriting to beginners, there should be a general explanation of the typewriter and the method of operation. Teach the mechanical features of the machine that are necessary in order to begin writing as follows:
 - 1. Correct insertion and removal of paper.
 - 2. Use of release lever for straightening paper.
 - 3. Shifting of the carriage.
 - 4. Use of marginal stops.
 - 5. Carriage release stops.
 - 6. Adjustment of line spacing.
- B. Position at the machine, including that of the hands and arms, should be illustrated to the class by the teacher. Following this, an explanation of the home or guide keys should be given.
- C. Drills to develop key location and staccato stroke, as:
 - 1. First finger:
 - a. Combinations:
j m n h j f y b g f j h j y j u j f g f r f t f or
j k ; f d s a j a j k s k l k l ; f ;

e. Number drills:

sw2ws lo9ol s2s 191 s5432s 167891

4. Fourth finger:

a. Location drills:

lkl;; fdsaa ;o; aqa ;/; 1/1 sas 1/1szd

j;p;/;j faqazaf

b. Double letter practice for rhythm:

bookkeeper parallel commission accuracy disappoint

c. Alphabetical sentences for command of the keyboard.

D. Shifting drills. Explain and give the correct methods:

3. Compound words:

trade-mark man-of-war by-laws labor-saving

E. Centering. Explain how to center correctly and quickly:

1. Titles of books and plays:

LORNA DOONE

A YANKEE IN THE COURT OF KING ARTHUR

2. Headings and subheadings:

BASEBALL

World Series

1921

PLAYING THE GAME

by

B. C. FORBES

THE FIRST NATIONAL BANK

Denver, Colorado

3. Poetry makes a splendid drill for centering:

The riches of the commonwealth

Are free strong minds, and hearts of health;

And more to her than gold or grain

The cunning hand and cultured brain.

—Whittier.

F. Drill to eliminate false motion and loss of time in returning the carriage:

julep

julep (allow one count for the shift)

julep

G. Tabulating. Explain and illustrate tabulator rack, tabulator stops, tabulator key or keys:

1. Suggestive drills:

fix fixes fixed fixing

vex vexes vexed vexing

Capital

State

Denver

Colorado

Salt Lake City

Utah

Sacramento

California

Albany

New York

H. Dictation:

Dictation is of value in securing quick response, co-ordination, and alertness. It brings to the pupil the value of being able to spell well. Dictation should first start with words and then gradually go into phrases and sentences. Alphabetical sentences can be used to great advantage in strengthening the knowledge of the keyboard. For the more advanced pupil interesting selections may be given.

I. Punctuation:

Drill should be given on spacing following the comma, period, exclamation mark, question mark, colon, semi-colon, dash, hyphen, parenthesis, quotation marks, abbreviations and initials.

One practical way to handle an effective drill on punctuation is to take up one punctuation mark at a time, explain it and then dictate sentences and have the pupils insert the punctuation marks where they should go. Class discussion and correction should follow.

J. Paragraph work:

Longer and more difficult paragraphs may be used to train in accuracy, and command of the keyboard.

K. Acceleration tests for interest and the beginning of speed work.

III. Method:

The outlines in typewriting have been made with the definite idea of bringing out the principles that should be stressed. No principles should be left untaught but the drills need not be the same as those in these outlines. The class must be kept together in the study of the principles and in the drills. Individual work from the textbook to supplement this teaching may then be al-

lowed. It is not possible to state any definite amount of time that should be given to actual instruction and drill, which can be safely followed every day, but it is safe to say that at least half the time should be so used during the first year. At the very beginning almost all the time should be given to such instruction to insure proper habits. Teachers should start pupils in on paper checking from the very first and the idea that it is worse to fail to find an error than it is to make it should be inculcated. This is a true business standard in typewriting. A definite attempt should be made to develop honesty and responsibility in the checking of typewritten work. Show by actual contacts required of pupils that the typist in a business firm is a loser if work is not turned out fast enough, if too many errors are made, if the errors which are made are not found and corrected neatly. Constantly develop the idea that the pupil must become his own corrector. Aid him in comparing his work with true standards by supplying examples of actual typewritten work of acceptable grade as represented by materials from good business houses. The teacher should show how to correct rather than correct and hand back papers. By following a plan of this kind, he may develop in the pupils ideals of accuracy, honesty, and responsibility and soon have to check work only once or twice a week. Some of this work may be delegated to assistants. The checking done by teachers should be for the purpose of finding weaknesses of pupils, instructional matter, or methods. Stress should be laid on the necessity of knowing how to use principles and on gaining in skill rather than completing so many lessons. This habit of requiring the completion of so many lessons, in many cases perfect ones, has furnished an easy standard for advancement, but not a very scientific one. It has measured total acceptable work done, in many cases without reference to time required to do it, and has in few ways tested knowledge of principles or skill on a time basis. It has also been the cause of much dishonesty as evidenced by the handing in of papers written by others and by the skilful use of the eraser—a valuable asset, but not when used in this way.

Emphasis must be shifted from the perfect copy, and so many lessons done, to a normal attainment in accuracy and in speed within a given time. This should not be construed to mean that no individual work should be done in the textbooks and that where it is done it is not to be used in determining marks, but rather this type of work is to occupy not more than half the time, nor to be counted as more than half in determining the mark.

Neither is there any objection to requiring perfect work for perfect marks but normal attainments must be considered for passing marks.

On the individual work a system should be evolved which will insure the writing of the last of an exercise as frequently as the first. Any system which requires taking the paper from the machine and starting over when an error is made is fundamentally wrong—at least until the whole exercise has been practiced two or three times. Require good margins, arrangement and neatness at all times.

IV. Tests:

The tests used should be of two kinds: one to measure knowledge and ability to apply the subject matter, and one to test skill. It is necessary to test for knowledge of units such as punctuation, arrangement, centering, and so forth, in order to know whether they are clearly understood. The tests for the semester should be so designed as to determine the extent to which the aims have been attained, and should contain subject matter questions and skill exercises pertinent to each aim. There are at present no standard tests for the subject matter of this half but it should be easy to construct some, using good standard tests in other subjects as guides and following out the suggestions for a good test as given in the general introduction. The Blackstone tests should aid in testing skills.

Standards:

The following tentative standards are set up with the idea in mind that when better ones are attainable they will be substituted. At the end of the first half year the pupil should have a good working knowledge of the keyboard, use only the touch method, write with an even touch, use the proper finger for each key, know the parts and uses of the typewriter specified in this outline, write with rhythm, be able to center, use punctuation marks correctly, be able to proof read typewritten copy, and attain the equivalent of a score of 88 as represented by the Blackstone tests.

VI. Equipment:

Machines should be of one standard make for beginners for the following reasons:

1. Instructions involving machine operation can be given more rapidly and are comprehended by all the students at the

same time. For example: In teaching the self-starters, if Underwoods and Remingtons are in the same room, the teacher must give two sets of instructions and twice as many demonstrations. With thirty machines of the same make he can demonstrate and instruct much more efficiently.

2. In beginning work it is more profitable for a student to master one machine than to have a smattering knowledge of several.

