

COURSE OF STUDY

...FOR THE...

PUBLIC SCHOOLS OF ARIZONA

PREPARED BY R. L. LONG
SUPERINTENDENT OF PUBLIC INSTRUCTION

AND ADOPTED BY

THE BOARD OF EDUCATION

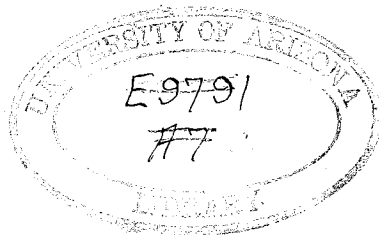
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ACKNOWLEDGMENTS.

In the preparation of this Course of Study the undersigned is indebted to the following sources for much valuable aid: The Course of Study for the Common Schools of Illinois; Manual of the Elementary Course of Study for Schools of Wisconsin; Course of Study for the Schools of Iowa; State Manual and Course of Study for the District Schools of Michigan; Uniform Course of Study for Elementary Schools of Nevada; State Manual and Uniform Course of Study for the Elementary and High Schools of Indiana; the Courses of Study of the Cities of San Francisco, St. Louis and Minneapolis respectively.

R. L. LONG,
Superintendent of Public Instruction.



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INTRODUCTORY.

The following Course of Study has been prepared with one object in view—to enable the pupils of the Public Schools of the Territory to follow from month to month and year to year a plain, simple, progressive line of study that shall give them in the end a good Common School education. Its constant aim throughout is:

1. To furnish as a basis for work to principals, teachers and pupils an outline of the various branches required to be taught in the public schools, arranged in the several grades in accordance with established and approved methods.

2. To unify the work of teachers throughout the Territory.

3. To simplify classification, and thereby make the work of the teacher lighter, but more systematic and effective.

4. To divide the entire course into definite portions, so that a record of the progress and standing of each pupil may be preserved, and the confusion and loss of time resulting from frequent change of teachers avoided.

The work is arranged for eight years, of eight months each—four years in the Primary and four in the Grammar grade. In districts where school is maintained for a less period than eight months the course must be extended to cover the ground. For instance, if the term is only six months during the year, the pupils will take the first six months' work in each year of the course, and at the beginning of the next year will take up the last two months' work and the first four months of the succeeding year, and so on through the entire course.

Attempt is made to arrange the branches of study by topics throughout the course. These topics in many instances are not in the order taken up by the text-book. The teacher can follow either arrangement without in any way departing from the general course. The only requisite being that he accomplish the work stated in the course, and do it thoroughly.

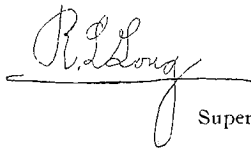
The methods pointed out in the primary course are designed to be suggestive; the course states *what* should be taught and the *order* in which it should be taught; to the individuality of the teacher is left the *how* to teach the subject. He should remember that he is at liberty to use any or all methods at his command, the only requirement being that he *do the work well*.

While it is desirable that a pupil shall be in the same grade in all his studies, yet in a country school this is not always practicable, nor is it positively essential. He should be allowed to recite in such grade in each study as he can pursue profitably—perhaps the third in one branch,

the fourth in another—but he should be worked up to uniform classification as soon as possible. While the course should be strictly adhered to with pupils attending from year to year, yet a wise discretion should be exercised by principals and teachers in deciding how closely it should be followed with pupils who are only in school a few months, or who, from age or other circumstances, are soon to leave the public schools.

The teacher, in closing his school, should leave a record showing how much of the course of study *has been completed* by each pupil. This will aid his successor in classifying the pupils. Pupils, in removing from one school district to another, should be furnished with a statement, by the teacher, of the amount of work done.

This course, which is the first extended outline of study ever prepared for the schools of this Territory, is submitted to the teachers for their guidance and assistance. It is not perfect. What errors are in it will be promptly corrected when shown to be errors. Teachers are requested to discuss it in their institutes and suggest improvements, but in the meantime they will be guided by it and will follow it as closely as possible.

A handwritten signature in cursive script, reading "R. L. Long". The signature is written in dark ink and is positioned above a horizontal line that serves as a separator between the signature and the title below it.

Superintendent Public Instruction.

PHOENIX, ARIZONA, September, 1899.

COURSE OF STUDY.

Primary Grades.

FIRST YEAR.

WHAT PUPILS SHOULD HAVE.

First reader, or primer, slate, pencil, sponge, ruler and drawing book No. 1.

WHAT TO TEACH.

Reading.—First reader, or primer. Four recitations daily.

Spelling.—From reader and prepared lists.

Writing.—Forms of letters.

Numbers.—Combinations to 10. Writing numbers to 100.

Language.—With reader.

Physiology and Hygiene, Oral.—See directions for each month.

Observation Lessons.—See directions for each month.

Drawing.—Follow instructions in drawing book.

FIRST MONTH.

Reading.—Object, to recognize at sight the printed word and to pronounce it readily as a whole; to acquaint the child with the written form of words that it has known before only by sound.

Make the child at home and free to talk. Fix his attention upon some familiar object, a picture of the same, and then the printed word upon the chart or blackboard. When the child has learned four or five words in that many days, the articles *a* and *the* should be prefixed, as *a dog, a cat, a boy; the dog, the cat, the boy*. The child should be taught to pronounce each group as one word, pronouncing *a dog* as if it were a word of two syllables, like *adopt*. Place all new words upon the board, adding to the list from day to day. In every recitation give a drill on these words, pointing rapidly first to one then to another while the children pronounce them quickly and accurately. Be careful about articulation in the start. Revise the list on the board about once a month, omitting words that are well mastered. Teach words as wholes, but soon begin to teach the alphabet. For seat work let the child build the new words with printed letters on cardboard, or print on his slate, printing each word several times.

Spelling.—Spelling for the first year at least should be conducted with the reading lesson. All words in the reading lesson should be spelled orally and copied on the slate as seat work. The pupil should soon begin to spell by sound, and to recognize that words usually consist of two or more sounds. This can be shown by speaking the words slowly and more slowly, prolonging the sounds and gradually separating the word into its elements. Train the pupil to do this and to repeat the last sound, thus, at-t t-t, lip-p-p-p.

Writing.—Have slates ruled on one side, and long pencils well sharpened. Using the blackboard, the teacher shows that the letter *l* is composed of two curves, straight line, and dot. Show how lines should be joined and where dot should be placed. After careful instruction let pupils make the letter under directions of teacher. Continue on this letter until it can be fairly well made. Impress upon the pupil that this is *writing l* as his papa and his mamma do. Instruct him that hereafter he is to use this letter in place of the print letter; all other print letters, however, to be used until the script letters have been learned, one at a time, and substituted for the print as above. Seat work will now combine print and script, thus: *l*-s, t-h-*l*-s, s-p-*l*-n. Take up *u* and then *w* in the same way, being careful not to introduce a new letter until the old one is reasonably well made. See that pupil holds his pencil in proper manner, and observes the ruled lines on his slate.

Numbers.—Develop idea of number by counting, not above 10, using objects, such as pebbles, sticks, beans, corn. Teach each number as a collection of units. Example: 00000, a group, five *spoken* or five *written*.

Language.—Language work for the first two or three years should be in connection with the reader. Induce the pupil to talk, using full sentences. Correct common errors in language.

Observation.—Two lessons each week, brief and simple, on objects or animals, in which such items as form, color, size, speed, strength, food, covering, habits, use, etc., are pointed out. Subjects suggested: Cow, dog, cat, horse, stove, hat, book, ear of corn. Distinguish colors red and blue.

Physiology and Hygiene.—Call attention to the different parts of the body, as head, neck, trunk, arms, hands, legs, feet; to some of the noticeable effects of narcotics and stimulants, as drunkenness, idleness, filthiness, bad company, poverty.

SECOND MONTH.

Reading.—Continue work of first month. Teach a few adjectives and combine with words already learned, as, *a black dog, a good cat, the small boy*. Observe former instruction about *a* and *the*. These words ordinarily should not be pronounced as independent words, but

as a part of the word that follows. When the above combinations are thoroughly learned, teach one or two verbs, as, *runs, plays*. Form sentences, *the boy runs, a cat plays, the small dog runs, the good boy plays*. Take most new words from the reader which the child is to use.

Spelling.—List of words on blackboard used in reading lesson. See instruction for reading, first month.

Writing.—Take up the following letters in the order given: n, m, x, v, o. Follow instructions for i. Show how to combine letters, *in, on*. Continue seat work as before, thus: *not, run, swim*. All written work should be carefully inspected by the teacher.

Numbers.—Counting to 20. Elementary operations, combinations and separations to 4. Teach pupils to make neat figures.

Language.—Tell short, easy stories and have pupils reproduce them orally, first in answer to questions and then in comprehensive form. Aim to cultivate the use of good language.

Observation Lesson.—Talk about places where you can go, things you can eat, things you can see, things you can wear. Teach north, south, east, west; green and yellow.

Physiology and Hygiene.—Talk about the skeleton and its divisions; how held together; general function of bones; soft in childhood and easily bent; affected by tight clothing; position of body; dangerous games. Repeat facts and read stories about the use and effects of tobacco and strong drinks.

NOTE.—Use elementary physiology for reference.

THIRD MONTH.

Reading.—Continue work of first and second months, combining the words already taught into as many different sentences as possible. Train the pupil to see the entire short sentence and then to speak it. Do not teach pupils to read as they talk, unless they talk right. Teach them to talk as well as to read. Do not allow them to drawl or to read in an artificial pitch.

Spelling.—List of words on blackboard used in reading lesson. Give a few short words similar in sound as an exercise in phonic spelling. Example: man, can, tan, ran. Continue this kind of work until pupils can pronounce new words without the aid of the teacher.

Writing.—Introduce a, e, c, r, s, one at a time, according to former instructions. Show height of r and s.

Numbers.—Counting to 30. Elementary operations to 6. Use counters. Tie them in bundles representing the highest number used in the elementary operations.

NOTE.—Teacher should use some good primary book on number work as a model.

Language.—Lead the child to talk about familiar objects such as he has seen and takes an interest in talking about. Never lose sight of the fact that "the tongue must prepare the way for the pen."

Observation.—Let pupils name six articles made of glass; six made of iron; six kinds of fruit; six kinds of garden vegetables; six articles of table furniture. Teach northeast, northwest, southeast, southwest; orange, purple.

Physiology and Hygiene.—Number and kinds of teeth; why we need teeth; care of the teeth; how to eat; chew food well; eat slowly; do not take large bites; food should not be too hot or too cold; do not eat too often; good manners in eating. Tobacco and the teeth; alcohol not food or drink; men do not need it; other animals do not drink it; it is a poison.

FOURTH MONTH.

Reading.—The pupil should now have a first reader, and should be able to read several pages at sight if properly taught up to this time. Do not let pupils attempt to recite a new lesson until they have mastered all the new words by means of blackboard drill. Make constant reference to the pictures in the reader, as they suggest the story that the pupil is to read, and the parts of the picture even suggest words in the story.

Spelling.—Blackboard list of words used in reading lesson. Silent letters designated by drawing slanting lines through them.

Writing.—Take up t, d, p, q, according to former directions, first showing that up to this time all the letters have extended from one ruled line to the line above (r and s being exceptions). Show that these new letters differ from the former ones in height, and teach the height above or below the base line of each individual letter, as it is taken up. Continue combination of print and script for seat work.

Numbers.—Counting to 40. Elementary operations to 7. Teach signs, +, —, ×, ÷, =, and practice their use.

Language.—It is true that "good habits of speech are caught rather than taught." Hence the teacher should always use model language. Do not presume that a teacher can inspire the child with the proper use of language, and at the same time make use of decidedly faulty English himself as a means of such instruction.

Observation Lessons.—Lead pupils to talk about seven things they can taste; seven they can hear; seven they can smell; seven they can only think of; seven that are heavy; seven that are light. Direction of places in vicinity of schoolhouse. Colors, black and white.

Physiology and Hygiene.—Cleanliness in dress and person; do not sit or lie on damp ground; keep feet warm and dry; exercise, not too long or too violent, as running, jumping rope, etc.; avoid sitting in

draft of air when warm; when coming from play into schoolroom put coats on; necessity of extra clothing when taking cold and for dry clothing when wet; sit, stand, and walk erect. Filthy habits are induced by the use of tobacco and strong drinks.

FIFTH MONTH.

Reading.—Master all new words before attempting to read, teacher pronouncing first, and then pupil. It is better to give the drill on new words when assigning the lesson; then test pupil's ability to name the words first thing when class is called to recite. Do not call it reading when the pupil halts and hesitates before speaking the words. Do not allow pupils to assume lazy, careless positions when reciting.

Spelling.—Words in reader. Teach diacritical marking of long and short sounds of vowels as marked in reader.

Writing.—Take up l, b, h, k, showing height. Call attention to the loop and how to make it correctly. See that all slates are ruled.

Numbers.—Counting to 50. Elementary operations to 8. Add by 2's, beginning with 1 and 2, to 11 and 12; and subtract by 2's from 12 and 11.

Language.—Copy all new words in reader. Tell story in reading lesson. Teach the use of capitals: beginning of sentences, proper names, word *I*.

Observation Lessons.—Teach names of eight qualities that may be discovered by sight, as clear, clean, bright, pretty, straight, opaque, muddy, icy; use them in sentences. Teach eight words denoting position, as in, on, above, below, between, around, among, before; use them in sentences. Review colors.

Physiology and Hygiene.—Care of hair, nails, hands, feet, face, teeth, skin; how to bathe and when; clothes, clothing at night. Read interesting stories about the effects of tobacco and alcohol.

SIXTH MONTH.

Reading.—Continue work of former months. Be sure that pupils get the thought before they try to express it. In calling words, see that they give full, pure vowel sounds, and that they do not clip consonant sounds. Let them tell the story of the lesson in their own language.

Spelling.—Words in reader. Have pupils pronounce all the words at the head of the lesson two or three times before spelling. In copying words on slate or blackboard, have pupils use all the script letters that they have learned.

Writing.—Take up j, y, g, z, f, with full instruction in making the inverted loop. Study height of each letter above and below the base line.

Numbers.—Counting to 60. Elementary operations to 9. Adding by 2's to 16; also subtracting.

Language.—Talk about objects represented by pictures in reader. Teach use of period and question mark at end of sentence. Be careful about use of capitals.

Observation Lessons.—Teach several qualities discovered by touch, as dry, smooth, cold, soft, sharp, rough; several discovered by hearing, as loud, low, noisy, harsh, buzzing, cracking; write sentences containing these words.

Physiology and Hygiene.—Dangers to the body resulting from fire, things eaten, some playthings, cold, heat, wind, lightning, insects, other animals, tobacco, cigarettes, whisky, beer.

SEVENTH MONTH.

Reading.—Continue work of former months. Vary the general plan of recitation by occasionally letting pupils read several preceding lessons at one recitation, each pupil reading a whole page or lesson. In this exercise do not dampen pupil's ardor by stopping him to correct minor mistakes.

Spelling.—Continue work of former months.

Writing.—Take up the capitals O, E, C, D, giving special attention to formation and height. Up to this time the pupil has used Roman capitals. He will now use script capitals only as fast as he learns how to make them.

Numbers.—Counting to 80. Elementary operations to 10. Add by 3's to 16, and also subtract. Thorough drill on making the Arabic figures.

Language.—Teach pupil to write his name, postoffice address, day of month and year. Teach marks of punctuation found in the reader. Teach use of *is* and *are*.

Observation.—Call attention to qualities discovered by taste, as sweet, bitter, sour, pungent; to such qualities as brittle, heavy, tough, elastic. Use in sentences.

Physiology and Hygiene.—Speak of the actions of the body or its members, as talking, moving, walking, eating, seeing, resting, thinking, sleeping; drinking. Give temperance lessons from reference book.

EIGHTH MONTH.

Reading.—Continue work of past months. Review preceding lessons frequently, and test pupil's familiarity with words by reading in other books of same difficulty.

Spelling.—Follow former instructions. Teach pupils to recognize syllables. Syllables should be spelled separately with sufficient pause after each to denote syllabication, but without pronunciation. Review all the words in the reader.

Writing.—W, X, Q, Z. See former instruction for capitals. Review this year's work.

Numbers.—Counting to 100. Elementary operations to 10. Add and subtract by 3's to and from 20. Review.

Language.—Let pupils write short sentences from dictation. Teach abbreviations found in reader. Teach use of *was* and *were*.

Observation Lessons.—Lessons on use of objects or substances. Example: Leather is used for shoes because it is tough. List suggested: wood, iron, chalk, ice, glass, cotton, hemp, gold, salt, paper.

Physiology and Hygiene.—Explain use of muscles and bones; show effects of strong drink and tobacco on the limbs by the unsteady gait and trembling hand.

TESTS FOR PROMOTION.

Reading.—The pupil should be able to read orally with a fair degree of readiness and accuracy any lesson in the first reader, and to tell in his own language the substance of what he has read.

Spelling.—Ability to spell orally and in writing all words in first reader; to divide words into syllables, and to spell syllables by sound.

Writing.—Should be able to make and combine all the small letters; to make capitals, and give the space in height of all letters taught.

Numbers.—Should be able to recognize as a whole groups of objects up to 5; to make all the combinations in adding, subtracting, multiplying and dividing numbers, up to 10; to make all the figures correctly.

Language.—Pupil should be able to tell the story of his reading lesson in acceptable language; to copy correctly any sentence in his reader; to write his name, postoffice address, date of the month and year, using correctly the capitals, punctuation marks, and abbreviations in the same; to use *is* and *are*, *was* and *were*, in sentence building.

Observation, Physiology and Hygiene.—A fair understanding of the facts taught.

Primary Grade.

SECOND YEAR.

WHAT PUPILS SHOULD HAVE.

Second reader, slate, pencil, sponge, ruler, and drawing book.

WHAT TO TEACH.

Reading.—Second reader or readers. Three recitations daily.

Spelling.—From reader, and other school work.

Writing.—Form of capitals.

Numbers.—Elementary operations to 20; simple addition and subtraction.

Language.—Oral lessons with reader.

Observation Lessons, Physiology and Hygiene.—Recite with first year class.

Drawing.—Complete drawing book No. 2.

FIRST MONTH.

Reading.—Object, to call words and phrases at sight; to enlarge vocabulary; to gather thought from printed page; expression.

Ten or more pages of reader. Continue work of last year. Never permit pupils to attempt to recite until they can pronounce all the new words, usually at the head of the lesson, and give the meaning of these words.

Spelling.—From reader and blackboard. Have the new words carefully pronounced and spelled before reading.

Writing.—Practice on letters already learned. Continue with ruled slates. Keep a list of all the letters on the blackboard, correctly made in alphabetic order, where pupils can see.

Numbers.—Elementary operations to 12. Add and subtract by 2's, 3's, and 4's. Add columns of figures including 6's. Read and write numbers to 100. Roman notation to X.

Language.—In connection with reader. Give list of words and have pupils arrange in sentences. Have them write brief stories that they have learned to tell. Be careful about the use of capitals and final marks of punctuation.

SECOND MONTH.

Reading.—Ten or more pages in reader. Be careful to secure correct pronunciation and distinct articulation. Give frequent drill upon such words as *top*, *which*, *wings*, *mast*, *ducks*, pronouncing the word and then the final consonant sound or sounds, as *top-p*; *top-p*; *top-p*. Drill upon vowel sounds in same way.

Spelling.—From reader and blackboard. Let spelling be both oral and written. Give frequent drills upon spelling by sound.

Writing.—Teach capitals U, Y, G, V. See that pupil knows the relative height of each letter and puts his knowledge into practice.

Numbers.—Elementary operations to 14. Add 2's by tens, thus: 2 to 3, 2 to 13, 2 to 23, etc. Add columns of five and six figures, to include 7's. Encourage pupil to add quickly. Read and write numbers to 150. Roman notation to XX.

Language.—Conversation lessons about stories in reader. Encourage pupils to converse on familiar subjects. In reading and speaking, take care that they sound final *g* in such words as *running*, *jumping*, etc.

THIRD MONTH.

Reading.—Ten or more pages in reader. Test the pupil's knowledge of the meaning of words by requiring him to use them in sentences *after* the meaning has been fully explained. Do not fall into the habit of pronouncing words for the pupil while he is reading, since that shows that the lesson has not been prepared for intelligent reading. Such blundering over a lesson does little good and much harm. Teach punctuation marks in the reader not already learned.

Spelling.—From reader and blackboard. Have frequent reviews of the hard words in back lessons. Keep list of words frequently misspelled and drill daily upon them.

Writing.—Capitals N, M, T, F. See that pupil holds pencil properly and assumes a proper sitting position.

Numbers.—Elementary operations to 16. Adding 3's and 4's by tens; columns of figures to include 8's. Begin subtracting by tens. Read and write numbers to 200. Roman notation to XXX.

Language.—Teach plural forms of names; correct use of *a* and *an*, *is* and *are*, *was* and *were*. Use in sentences. Write answers to questions on what is seen in a picture.

FOURTH MONTH.

Reading.—Twelve or more pages. Do not teach that the voice should fall at a period or keep up at a comma, or that you should pause at a period long enough to count four and at a comma to count one. Aim at naturalness.

Spelling.—From reader and blackboard. Give lists of words from back lessons and have pupils copy, using proper diacritical marks so far as learned, and making silent letters, without reference to reader. Teach them to pronounce these words *as they have marked them*, making corrections afterwards.

Writing.—Capitals A, P, B, R. Do not attempt to hear another class recite while the writing lesson is up. This recitation requires *all* the time of the teacher, as well as the time of *all* pupils.

Numbers.—Elementary operations to 18. Adding 5's and 6's by tens. Subtracting 3's and 4's by tens. Add columns of figures, including 9's. Continue reading and writing numbers. Roman notation to XL.

Language.—Use "general lessons" for this month, calling the names of objects that can be tasted, heard, etc., *name words* or *nouns*. Let pupils make additional lists and write sentences.

FIFTH MONTH.

Reading.—Twelve or more pages. Give frequent drills upon elementary sounds and combinations. Give continued attention to pronunciation, articulation, accent, emphasis, inflection. Do not keep the

class too long on one lesson. It is better to review it after a time than to read that in which the class has lost interest.

Spelling.—From reader and blackboard. Give attention to the division of words into syllables and to marking accented syllables. The syllable is the unit of pronunciation, and good pronunciation cannot be secured without careful drill upon syllables. This is of special importance if you are using the word method, since the syllable really has no place in that method.

Writing.—Capitals I, J, H, K. Make the writing hour pleasant to the pupil. Give directions in a general way to the class, but more to the pupils individually.

Numbers.—Elementary operations to 20. Add columns of figures, including 0's. Continue reading and writing numbers of three digits. Teach how to make change up to fifty cents, using real coins. Teach to recognize an inch in length, a foot, a yard. Roman notation to L.

Language.—Use general lessons for this month, calling attention to *quality words*. Let pupils make additional sentences, using quality words in reader.

SIXTH MONTH.

Reading.—Twelve or more pages. Teach all diacritical marks in the reader. Rapidly review lessons passed over, letting each pupil read a whole page or whole short lesson. Let pupils read interesting stories in other easy second readers or hard first readers. Call upon pupils to read without preparation, as an exercise in sight reading.

Spelling.—From reader and blackboard. Require pupils to bring portions of their reading lesson neatly written upon their slates. Carefully inspect, and return slate for corrections.

Writing.—Capitals L, S. Review capitals.

Numbers.—Elementary operations to 22. Continue adding and subtracting by tens. Drill on adding columns. Table of U. S. money. Things in a dozen, inches in a foot, feet in a yard, and easy fractional parts of same. Practical examples. Roman notation to LX.

Language.—Give instruction on forms in letter writing. Write a short, neat letter on the board and let pupils copy. In same way, practice upon address on envelope. Teach the use of *has* and *have*, *saw* and *seen*.

SEVENTH MONTH.

Reading.—Fifteen or more pages. Cultivate a pure, natural tone in reading. Strive to make the reading pleasant to listen to; not harsh, loud and mechanical. Require pupils to commit to memory and to recite favorite selections from reader or other sources.

Spelling.—From reader and blackboard. Prepare lists of words and let pupils pronounce. When the pupil can pronounce the words, let him spell them by sound.

Writing.—Drill on form and spacing. Give instructions on formation of figures.

Numbers.—Elementary operations to 24. Adding columns of figures rapidly, only partial sums and totals to be named. Examples to illustrate the process of carrying. Practical examples using operations already learned. Number of pints in a quart, quarts in a gallon, and easy fractional parts of same. Roman notation to LXX.

Language.—Let pupils write full answers to questions; as, "Did he ride to town?" The pupil writes: "He did ride to town." In this exercise the pupil changes the capital, the form of the verb, and the final mark of punctuation.

EIGHTH MONTH.

Reading.—Fifteen or more pages. Read much as review and supplementary work, remembering that the way to learn to read is to read, read, read.

Spelling.—From reader and blackboard. Teach use of common forms liable to be incorrectly used, as to, too, two; here, hear; no, know; son, sun; flour, flower; by, buy; there, their. Write sentences using these words.

Writing.—Drill on the principles of the small letters, capitals, figures. How to unite letters.

Numbers.—Elementary operations to 25. Continue rapid addition, including the process of carrying. Practical examples using feet, yards, dollars, pints, gallons, etc. Dry measure. Roman notation to C.

Language.—Review all work passed over. Continue letter writing, requiring pupils to prepare letters similar to the copies placed on the blackboard, but using their own language. Have pupils make sentences telling what they can do, what a horse can do, what a bird can do, etc., using different verbs as far as possible. Show that these are *action words*.

TESTS FOR PROMOTION.

Reading.—Ability to read with proper expression and a fair degree of readiness and accuracy any lesson in the second reader; to tell in the pupil's own language the substance of what he has read; to read an entire lesson, retaining expression to the last; to recite from memory a number of choice selections.

Spelling.—Should spell orally and in writing all words in reader; spell by sound; designate silent letters; use diacritical marks given in the reader, and pronounce letters thus marked.

Writing.—Ability to write with reasonable speed any lesson in the reader, in a neat, legible hand, with general uniformity in the form and relative height of letters.

Numbers.—Ability to read and write numbers in Arabic notation to 1,000, in Roman notation to C; to add columns of six or more figures

with reasonable rapidity and accuracy; to understand the process of carrying; to perform elementary operations, that is, addition, subtraction, multiplication and division, where combinations or results do not exceed 25; to solve easy practical examples, using concrete numbers of denominations with which they are familiar, as dollars, cents, bushels, etc.

Language.—General knowledge and application of what has been learned.

Observation, Physiology and Hygiene.—A good understanding of the things taught.

Primary Grade.

THIRD YEAR.

WHAT PUPILS SHOULD HAVE.

Third reader, copy-book, slate, pencil, ruler, pen, ink and paper for practice; drawing book.

WHAT TO TEACH.

Reading.—About three-fifths of third reader, with supplementary reading. Two recitations daily.

Spelling.—From reader and other lessons.

Writing.—Copy-book, with pen and ink.

Numbers.—Reading and writing numbers. Fundamental operations.

Language.—Oral lessons with reader.

Geography.—Oral. See suggestions in this year's work.

Observation, Physiology and Hygiene.—See suggestions in this year's work.

Drawing.—Follow instruction in drawing book No. 3.

FIRST MONTH.

Reading.—Object, more readily to call words, phrases and short sentences at sight; to enlarge vocabulary; to articulate more distinctly; to acquire better expression; to gather thought from printed page.

About fifteen pages of third reader. See suggestions for second year's work. Have the words at the head of the lesson pronounced, spelled and defined before reading. Question pupils *before* reciting, to test preparation; *after* reciting, to test understanding of what has been read.

Spelling.—If a spelling book is used, follow it and master it, but do not neglect to have the new words in *all* lessons spelled and mastered. Observe former instructions.

NOTE.—Third and fourth year classes may recite together if speller is used.

Writing.—Instruct pupils how to take care of pen, ink and copy-book. Give instruction on each character or word in the copy; let pupils practice making same on practice paper; when it can be made sufficiently well, write copy in copy-book, always taking pains to do best work in copy-book and to keep it neat and clean. Let the individual pupil understand that he must continue on practice paper until he can write copy sufficiently well for copy-book. Honest rivalry can thus be inspired in the pupil to be first, at least not to be last, in writing copy in copy-book. Do not practice on a whole line in copy-book; one word is enough at first.

NOTE.—Copy-books, pens and ink should be kept by teacher and distributed at each recitation.

Numbers.—Teacher should have a good primary arithmetic and use it as a guide. Use what has been learned in previous years. Teach reading and writing numbers of not more than three periods. Give daily rapid work in addition. Multiplication table thoroughly learned to the 6's. Division table in connection with multiplication table. Give daily drill on examples containing +, —, ×, ÷, =. Roman notation to CC.

Language.—Teacher should have a good work on language and use it so far as practicable. Point out name words or nouns, and telling words or verbs, in reading lesson. Use sentences containing singular and plural forms of nouns and verbs.

Observation Lessons.—Common plants, trees, flowers and fruits; where they grow, whether cultivated, how cultivated, use.

Physiology and Hygiene.—Human body. Principal bones and their uses. Simple instructions relating to health and habits. Bad effects of tobacco, cigarettes, chewing-gum.

Oral Geography.—Teach terms right, left, front, back. Point in these directions. Point north, south, east, west. Point to top, bottom, right side, left side of map, and fix names north, south, east and west.

SECOND MONTH.

Reading.—About fifteen pages. Give particular attention to pronunciation, articulation and such diacritical marks as are in the reading lessons. See that pupils do not clip words, and do not blend the final sound of a word with the initial sound of the following word, as, *birds sing*, not *bird sing*; *Lucy's mother*, not *Lucy smother*.

Spelling.—Prepare a list of words of three syllables, that pupils can pronounce, and have them copy the list, dividing the words into syllables. Let them pronounce the first syllables of all the words, then the second syllables, then the third. Pronounce the words, pausing after each syllable. Give much drill on syllabication.

Writing.—Be careful about manner of holding pen, position of copy-book, position of pupil. Point out common errors in formation of letters, and give instruction on blackboard. Do not allow pupils to continue writing while you are giving instruction on board. Insist upon attention in all recitations and in all exercises.

Numbers.—Addition of numbers where carrying is involved. Subtraction where borrowing is involved. Multiplication and division tables to 7's. Teach terms: sum, difference, minuend, subtrahend. Roman notation to CCC. Mental exercises.

Language.—Teach pupils to recognize different kinds of sentences, as, telling, asking, commanding and exclaiming sentences. Classify sentences in reading lesson. Teach two uses of period: to close a sentence; to show abbreviation.

Observation Lessons.—Plants and trees, their names, shape of leaves, roots, flowers. Plants used for food. Use of trees. Care of shade trees.

Physiology and Hygiene.—Human body. Head, trunk, limbs and their parts. Care of body. Proper position in sitting, walking, standing. Evil effects of narcotics and stimulants. Read interesting stories on health.

Oral Geography.—Locate objects in neighborhood by giving direction from school house. Draw diagram of school house; of school grounds.

THIRD MONTH.

Reading.—About fifteen pages. Question carefully on the lesson to induce thought on the part of pupil. Continue review of back lessons as ready sight reading; also supplementary reading in some second reader that is new to the pupil.

Spelling.—Prepare list of words of three syllables, taken from back lessons in reader. Have pupils copy the list, marking accented syllables, and pronounce the words correctly. Then let pupils mark the accent on the first syllable of each word, and pronounce; on the second syllable, and pronounce; on the third syllable, and pronounce. Give frequent drills.

Writing.—Drill upon the principles of all letters in the copy. See that pupils regard the relative height of letters. Practice making figures, being careful of form and height.

Numbers.—Multiply numbers, using multipliers as high as multiplication table is learned. Divide in same way. Multiplication and division tables to the 8's. Teach terms: multiplier, multiplicand, divisor, dividend, quotient, remainder. Roman notation to CCCC. Mental exercises.

Language.—Teach common and proper nouns, and possessive form of nouns. Make lists from reader. Proper nouns begin with capitals. Correct all errors in speech and in written exercises.

Observation Lessons.—Talk about birds known to pupils, as to habits, color, voices, nests, eggs, eating and drinking, moulting, migrations.

Physiology and Hygiene.—The skin: Description, functions, diseases, hygiene. Read lessons on the effects of stimulants and narcotics.

Oral Geography.—Draw map of neighborhood joining school house. Locate all objects by comparing directions.

FOURTH MONTH.

Reading.—About fifteen pages. Do not allow pupils to fall into the habit of depending upon the teacher to pronounce the difficult words while reading. Do not let class attempt to read more than they can prepare well. A lesson has not been prepared when the pupil must continually stop reading for the teacher to pronounce words. The pupil has either been negligent or the lesson too long; teacher should ascertain where the trouble is and take pains to remove it.

Spelling.—Prepare lists of short words, marking letters to change the regular pronunciation. Have pupils pronounce as marked to test their knowledge of diacritical markings. Continue former drills.

Writing.—Add to the interest of the writing exercise by teacher dictating letters by naming the principles, and pupils writing, as dictated, on practice paper, and discovering letters thus made.

Example: 2, 1, 2, 1, 2; pupil announces *u*. Again: 3, 1, 3, 1, 2; pupil names *n*. Again: 4, 3, 1, 2; pupil discovers *h*.

Numbers.—Multiplication table to 9's. Give much practice in rapid addition. Continue examples for multiplication and division. Review and use tables already learned. Roman notation to D. Insist upon neat slate work and good figures. Mental exercises.

Language.—Use words from reading lesson in sentence building; write sentences in answer to questions about pictures, objects, animals, persons, etc. Conversational exercises to be followed by written descriptions. See that pupils know how to use the hyphen in dividing a word at the end of a line.

Observation Lessons.—Frogs and toads: habits, voices, food, means of protection, uses, eggs, tadpoles, winter quarters.

Physiology and Hygiene.—Care of eyes. Avoid reading too fine print; in poor light; with book too close to face; with lamp in front of face; while lying down. Avoid rubbing the eyes. Avoid straining them in trying to detect distant objects. Avoid looking at brilliant objects like the sun and reflecting mirrors.

Oral Geography.—Talk about hills, mountains, plains, rivers, ocean, land.

FIFTH MONTH.

Reading.—About fifteen pages. Require pupils to memorize and recite choice selections of prose and poetry. Teach how to use the

dictionary in preparing lessons. Lead pupils to discover the meaning of new words from the context, without use of dictionary; then refer to dictionary to verify.

NOTE.—For pupils of this age a small dictionary is better than an unabridged.

Spelling.—Let spelling be both oral and written. Whenever pupil spells, insist upon good writing; whenever he writes, insist upon good spelling. Make frequent use of dictation exercises. Drill on synonyms and abbreviations.

Writing.—Have the copy well executed on practice paper before writing in copy-book. See that pupil does not bear too hard on pen, does not shade downward strokes, and makes like parts of the letter parallel.

Numbers.—Multiplication table to 10's. Teach time table, and give practical examples in application. Teach the simplest forms of fractional parts of same. Continue work of fourth month. Roman notation to DC.

Language.—Let teacher read short story; then pronounce the words one at a time for pupils to write on practice paper. Require pupils to re-write this exercise for next day's lesson, being careful about capitals, spelling and terminal punctuation marks.

Observation Lessons.—Talk about clouds, fog, mist, rain, hail, dew, frost, snow, ice.

Physiology and Hygiene.—Care of ears. Clean with soft cloth and water; never insert hard substances for removing wax. Call attention to unfortunates who are deprived of the use of eyes and ears. Teach respect for and duty to unfortunates. Read interesting facts about stimulants and narcotics.

Oral Geography.—Drill on map of county. If no map is at hand, teacher should make a copy of one for class use. Tell pupils there are thirteen counties in Arizona, and show them that the home county is a small part of the Territory. Towns, rivers, railroads.

SIXTH MONTH.

Reading.—About fifteen pages. Reviews and supplementary reading. Encourage pupils to read at home and to talk about what they have read. This will form a part of language work.

Spelling.—Make lists of words frequently misspelled and practice till pupil can spell them readily. Difficult words must be practiced upon again and again. Continue work of other months.

Writing.—Give movement exercises. Make the oval, size of capital O, letting the pen move around the circumference a number of times in quick succession. See that movement is uniform, not jerky. Continue copy-book work.

Numbers.—Multiplication table to 12's. Select and use practical examples, applying operations already learned. In solving problems orally, pupils need not repeat a long form of words, but should state the process clearly and concisely. Roman notation to DCC. Require solutions of easy problems.

Language.—Continue drills upon the use of *is* and *are*, *was* and *were*, *has* and *have*, explaining use of each. Continue letter writing. Use of comma to set off words of address.

Observation Lessons.—Talk about air. It cannot be seen; can be felt; pure air; foul air; how purified; necessary to animal life; to vegetable life; wind; thunder; storms.

Physiology and Hygiene.—Tell about the nerves; compare with telegraph and telephone wires; explain use; condition of persons when nerves are paralyzed. Effects of alcohol and tobacco on the brain; on the nerves. Need of sleep; retire early.

Oral Geography.—Continue on county map. Draw map locating towns, rivers, railroads, prominent mountains.

SEVENTH MONTH.

Reading.—About fifteen pages. Review and supplementary reading. Do not allow the reading exercises to be dull and uninteresting. Bring interesting stories to the class; read them and have them read and talked about. Arouse enthusiasm in all class work.

Spelling.—See that words are syllabicated and pronounced. This is a great aid to reading and pronunciation. Cultivate the habit of mastering words syllable by syllable. It is an old fashion that should be kept up. Require each lesson to be pronounced promptly, with open books, before spelling.

Writing.—Practice on capital O as movement exercise. Do not let the side of hand or the little finger rest or slide on paper; hand rest on nails of fingers.

Numbers.—Multiplication table completed and reviewed. Examples embracing all the fundamental operations and all the tables learned up to this time. Roman notation to DCCC. Mental drill.

Language.—Read short, interesting stories, and have pupils reproduce them orally and in writing. Give careful attention to spelling, punctuation, capitals, and use of words. Use of quotation marks.

Observation Lessons.—Talk about sun, moon, stars, planets, comets, rainbows, light, colors.

Physiology and Hygiene.—Lungs. Where located; use; how blood is purified; chest should not be pinched with tight clothing; necessity of proper ventilation in sitting room, bed room, school room. Read instructive stories and state facts about the effects of strong drink and tobacco.

Oral Geography.—Continue on county map. Learn about kinds of soil; trees growing in the county; grains, fruits and vegetables raised; material for food and clothing produced; animals, wild and domestic; birds, fish and reptiles; minerals found in county. Explain irrigation.

EIGHTH MONTH.

Reading.—About fifteen pages. Review and supplementary reading. Class should now be something over half way through the reader.

Spelling.—Review difficult words. Require pupils to arrange list of words alphabetically, by accent, by number of syllables.

Writing.—Continue form and movement exercises. In letters containing the first principle, or straight line, see that pupils make the line straight *nearly* to the base line before curving to join with next line.

Numbers.—Multiplication and division tables reviewed and applied. Practical examples. Roman notation to M.

NOTE.—Pupils should not be allowed to count fingers in adding, or to follow any devices which allow of adding by ones only. They must know the result when any two digits are to be added.

Language.—Give exercises in the use of *this* and *that*, *these* and *those*. Re-write short sentences, changing plural nouns to singular, and singular to plural; as, *The birds sing*, change to *The bird sings*.

Observation.—Talk about leather, wool, flax, cotton, silk, fur, feathers, down. Where they come from; how prepared or obtained; for what used.

Physiology and Hygiene.—Organs of digestion. Describe the stomach and its working; why we eat; what to eat; how much to eat; table manners; how alcohol and tobacco affect the appetite and the stomach.

General outline of the map of Arizona. (Obtain map compiled by U. S. Government.) Teach the slope of the land from the directions of the rivers. Locate and describe the Colorado, Gila, Salt, Little Colorado, Santa Cruz.

TESTS FOR PROMOTION.

Reading.—Ability to read with proper expression and a fair degree of readiness and accuracy any lesson in the first half of the third reader; to give in the pupil's own language the substance of what he has read; to read entire lesson, retaining expression to the last; to recite from memory a number of choice selections.

Spelling.—Should be able to spell all words in the first half of third reader; to give meaning of words and use them in sentences; to mark accent and to divide words into syllables; to pronounce words in the reader according to the diacritical markings.

Writing.—Pupils should write a neat, legible copy hand with reasonable speed and mechanical accuracy, and be able to analyze all letters by principles.

Numbers.—Ability to write, read, add, subtract, multiply and divide numbers of three periods, using multipliers and divisors from 1 to and including 12; to perform accurately and rapidly examples involving all the fundamental operations; to read the Roman notation to M.

Language.—Should be able to state orally the substance of any lesson in the reader carefully studied and prepared; to write a paragraph correctly from dictation; to write and address a letter in correct form.

Observation, Physiology and Hygiene, and Oral Geography.—A good general knowledge of subjects taught.

Primary Grade.

FOURTH YEAR.

WHAT PUPILS SHOULD HAVE.

Third reader, elementary arithmetic, copy-book, slate, pencil, ruler, pen, ink, practice paper, and drawing-book.

WHAT TO TEACH.

Reading.—Last half of third reader, with supplementary reading. Two recitations daily.

Spelling.—From reader and other lessons. May have primary speller.

Writing.—Copy-book and practice paper.

Arithmetic.—Follow text-book and course of study.

Language.—Oral lessons with reader.

Observation Lessons, Physiology and Hygiene, and Oral Geography.—See suggestions on last year's work.

Drawing.—Complete drawing-book No. 4.

FIRST MONTH.

Reading.—Object, same as last year. Commence about middle of third reader. This will make the first month's reading a review of last year's work. Apply general directions for last year. Read about fifteen pages in reader.

Spelling.—Continue methods of last year. Careful work in syllabication.

Writing.—Use suitable copy-book, but do not let pupil write in the copy-book until he has thoroughly practiced the copy or the part of the copy he is to write. Urge each pupil to careful effort by promotion to

next copy when the present one is mastered. Advance the individual pupil to next copy when merit justifies, regardless of the other pupils in the class.

Arithmetic.—Pupils have elementary arithmetics. The first part can be gone over rapidly, since it is mainly review work, if instructions in this course have been followed. Teach more efficiency in the fundamental operations. Teach definitions of all terms used. See that class knows the multiplication table. Frequent mental drills on original problems.

Language.—Continue sentence building, written descriptions, use of capitals and punctuation marks, letter writing.

SECOND MONTH.

Reading.—About fifteen pages. Drill in articulating difficult combinations of sounds. See that final sound of one word is not blended with initial sound of following word so as to impair enunciation. Choice selections memorized and recited.

Spelling.—Let spelling be oral, phonic, and written. Teach diacritical marking. Teach and encourage the use of the dictionary.

NOTE.—Do not teach diacritical marking as a hobby, as an aimless pastime, or as an end. Never lose sight of the main object, viz., to enable pupils to pronounce words intelligently and accurately, as marked in the dictionary.

Writing.—Review the principles of written letters. Analyze all letters in the copy. Teach unit of height, i.

Arithmetic.—Give much practice in rapid addition of long columns, laying much stress upon accuracy. Teach how to add, subtract, multiply, and divide U. S. money, especial care being given as to separating dollars and cents in writing numbers. How to reduce dollars to cents, cents to dollars, etc. Give practical problems.

Language.—Have pupils fill blanks in sentences to test knowledge of use of such words as *is, was, were; has, have, had; this, that; these, those; boy's*.

THIRD MONTH.

Reading.—About fifteen pages. Do not pronounce words for pupil while reading; teach him to read independently. Halting and lifeless reading usually arises from a failure to master the new words in the lesson, and to gather the thought. Cure the evil by removing the cause.

Spelling.—Teach meaning of monosyllable and dissyllable, and have pupil classify list of words. Drill on accent, requiring pupils to accent different syllables of the same words as teacher marks the accent on blackboard.

Writing.—Spacing of letters, words, sentences. Teach unit of width, u. Keep copy-books neat and clean.

Arithmetic.—Long division. Teach process of long division by using 2, 3, 4, and 5 as divisors, to show similarity between short and long division. Then use 10 and 11 as divisors, since with these the pupil can easily determine the quotient figures. When 10 and 11 can be readily used, take 100, 101, 102, etc., as divisors. For a while provide much practice of this kind: $28726035 \div 104$; same dividend by 105, 106, etc. Gradually increase the size of the divisor as pupil is ready for it.

Language.—Have pupils write short compositions on familiar subjects, after the subjects have been freely discussed in the class. Teacher correct all errors, and show why they are errors.

FOURTH MONTH.

Reading.—About fifteen pages. Practice ready reading of lessons passed over, and lessons in other text-books of same grade. Give definitions of new words, and use in sentences as seat work.

Spelling.—Teacher write words on the board; apply diacritical marks; have pupils pronounce. Change the diacritical marks and have pupils pronounce *as marked*. This exercise will test pupils' knowledge in this line, and will show teacher the weak points, if any, in this branch of instruction.

Writing.—Teach movement and give daily practice on same. See that all pupils write. Teach what is meant by the *main slant* of letters.

Arithmetic.—Teach proof of division, multiplication, subtraction. See that long division can be easily and accurately handled. Take up denominate numbers.

NOTE.—Give frequent spicy exercises in mental work like this: teacher calls 3, multiply by 7, add 4, divide by 5, less 1, multiply by 4, add 4, multiply by 5, subtract 10, subtract 10, add 1, divide by 9, divide by 3, how many? Pupils hold up hands. Begin by giving simple exercises, and gradually make them more difficult, remembering that rapidity is the spice of the exercise.

Language.—Practice upon the use of *lie, lay; sit, set; rise, raise; teach, learn*. Continually look after such expressions as *them* apples; *these* kind of seats; *Was* you there? *I seen* you; *Can* I leave my seat?

FIFTH MONTH.

Reading.—About eighteen pages. Let pupils tell purport of lesson in connected discourse, before reciting. Continue drill on all marks and characters in reader.

Spelling.—Teach some of the most common abbreviations and how to write them.

Writing.—Dictate short, easy words by calling the numbers of the principles. Let pupils write as the numbers are called, and discover the word. Thus: teacher dictates 3, 1, 3, 1, 3, 1, 3, 1, 2, 3, 2; pupils write *me*. Again: 2, 1, 2 and 3, 1, 3, 1, 2, dot; pupils write *in*.

Arithmetic.—Finish denominate numbers. See that pupils are familiar with tables. Supplement the book by giving many practical examples, such as occur in every-day life. Teach pupils to give an intelligent explanation of their work. In solving problems require pupils to mark the denomination of results at different stages of solution.

NOTE.—Denominate numbers are placed before fractions so as to give pupils practical application of the fundamental rules. The teacher can reverse the order, if he desires.

Language.—Continue classifying sentences as telling, asking, commanding and exclaiming sentences. Determine subjects and predicates in short sentences. Pupils may prepare lesson by drawing one line under subjects, and two lines under predicates.

SIXTH MONTH.

Reading.—About eighteen pages. Require lesson to be thoroughly mastered before recitation. Make lessons short enough for pupils to master them, and then insist upon thorough preparation. Give enough work to keep pupils profitably employed.

Spelling.—Practice upon list of words frequently misspelled. Teacher should continually keep adding to this list, from written work in all recitations and exercises.

Writing.—Let pupils classify small letters with reference to height, as one space letters, two space letters, three space letters, etc. Teacher name letters and pupils name the class, as a rapid drill.

Arithmetic.—Take up greatest common divisor and least common multiple. See that the pupil understands what is meant by common divisor, common multiple, prime factor.

Language.—Teach use of apostrophe in abbreviations, such as I'll, I'm, can't, don't, etc. Teach proper use of such words. More work in formation of plurals.

SEVENTH MONTH.

Reading.—About eighteen pages. More supplementary work for sight reading. Exercises in articulation, enunciation and pronunciation. Secure correct expression; see that tone is pure, and that pitch is not too high, or voice harsh and loud.

Spelling.—Make frequent use of dictation exercises. Drill on common homonyms and synonyms.

Writing.—See that pupils do not shade downward strokes, do not press too hard with pen, do not grasp the penholder, and do not lean with face and eyes too close to paper.

Arithmetic.—Addition and subtraction of common fractions. Pupils should have a good understanding of what a fraction is, and its relation to the unit, or integer. Teach a thorough understanding of terms and definitions. Continued practice in processes of adding and subtracting.

Language.—Develop object; modifiers of subject; of predicate; of object. Practice on determining modifiers in short sentences.

General Lessons.—Recite with third year class.

EIGHTH MONTH.

Reading.—Finish book and review. Drill on all points of this year's instruction; determine weak points and strengthen them.

Spelling.—Write list of words for pupils to mark and pronounce. Classify sounds as vowels and consonants. Classify letters same way, and give sounds of same.

Writing.—Practice paper and copy-book. Cultivate moderate speed in writing, but do not accept careless haste for speed.

Arithmetic.—Multiplication and division of common fractions. Give special attention to *how*. It is not necessary at this early stage to tangle and confuse the pupil by attempting to show *why* the divisor is inverted.

Language.—Develop quality words and words that tell *how*, *when*, *where*. Find all these that are in the reading lesson. Show what they modify. Compare meaning of sentences with, and without, these words.

TESTS FOR PROMOTION.

Reading.—Ability to read with intelligence and expression any lesson in third reader and other reading of same grade; to pronounce any word in third reader and to use it in a sentence; to state substance of what he reads; to recite a number of choice selections.

Spelling.—Habitual good spelling in everything written by pupil; ability to spell by sound, and to pronounce correctly short words as marked in dictionary.

Writing.—Same as third year, except that pupil should show improvement in uniformity of letters, greater ease and elasticity of hand, and a better knowledge of the principles of penmanship.

Arithmetic.—Ability to read, write, add, subtract, multiply and divide simple numbers, compound numbers, common fractions; to perform operations with reasonable promptness and accuracy; to solve mental examples involving the processes learned, and to give definitions of terms used. The multiplication table must be thoroughly learned.

Language.—Pupils should be able to write an intelligent exercise or essay on familiar subjects, in which capital letters and punctuation marks, so far as learned, are properly placed. The spelling and grammatical construction should be generally correct, and the exercises properly arranged and neatly written. Should be able to compose a short letter, using the proper form, and should have a fair knowledge of sentences, subjects, predicates, objects, simple modifiers.

Grammar Grade.

FIRST YEAR. ^{5th}

WHAT PUPILS SHOULD HAVE.

Fourth reader, spelling book, the primary or other good dictionary, elementary arithmetic, elementary grammar, elementary geography, copy-book, pen, ink, slate, pencil, ruler, practice paper and drawing book.

WHAT TO TEACH.

Reading.—About three-fifths of fourth reader, with supplementary reading. One recitation daily.

Spelling.—Spelling book, and new or difficult words in all recitations.

Writing.—Copy-book and practice paper.

Arithmetic.—Finish elementary book.

Grammar.—Begin elementary book.

Geography.—Begin elementary book.

Observation Lessons and Physiology and Hygiene.—See suggestions in this year's course.

Drawing.—Follow suggestions in drawing book No. 5.

FIRST MONTH.

Reading.—Object, to understand the language, and then to present the thought clearly, distinctly and agreeably to the hearer; to enlarge vocabulary; to acquire the habit of reading and a taste for good reading matter.

Observe suggestions for third reader. See that position of pupils when reading is erect, easy and graceful. Insist upon pupils reading loud enough for all the class to hear distinctly, but check pupils who read rudely loud. About twenty pages of reader.

Spelling.—Eight or ten pages of speller. Continue methods of last year. Pupils pronounce all words in lesson with books open before spelling. Let this pronouncing exercise be as rapid as possible. Classify words as trisyllables and polysyllables. Review monosyllables and disyllables.

Writing.—Keep each pupil at work upon his individual copy until he can write it well, then let him do his very best work in the copy-book. Continue the work of last year.

Arithmetic.—Review tables in compound numbers, and review least common multiple and greatest common divisor. Begin review of common fractions.

Grammar.—On beginning grammar with a text-book, do not devote all the time to difficult definitions and rules which the child cannot apply. No effort should be made to teach grammatical theory, but rather a correct use of common words and forms and simple sentence building. Teach sentence as a whole; subject, predicate, object. Rules for capitals. Have pupils explain the use of all capitals in the reader.

Geography.—Study the earth as a whole by means of globe, maps and pictures. Shape and size. Land and water. Earth as a planet. Air. Forms of land. Forms of water. Surface of the earth. Moisture; drainage. Motions of the earth: daily, annual. Zones; parallels and meridians. Maps. Hemispheres. Use pictures in text-books to help pupils form proper conception of terms.

Observation Lessons.—Domestic animals. What they do for man; what we would be deprived of if we did not have them; why we should treat them kindly.

Physiology and Hygiene.—Why we need food; how prepared for the stomach; digestion and absorption. Why we need water. Greater part of the body is water. Effects of alcohol as a drink: does not satisfy hunger, is not a food; does not quench thirst, is not a proper drink; irritates lining of stomach; inflames the liver and eventually produces hardening or degeneration; impairs the action of the kidneys.

Oral History.—Talk and read about Columbus, Ferdinand and Isabella; discovery of America; how it was named; prominent early explorers and what they did. Encourage the pupil to read history at home by exciting a taste for this kind of reading.

SECOND MONTH.

Reading.—Teach pupils how to discover words requiring special emphasis. Modulation for parenthetical sentences. Commit to memory and recite choice selections. Give such definitions and drills as are usually found in the first part of the reader. Use of dictionary.

Spelling.—Eight or ten pages of speller. Be thorough in pronunciation, articulation, accent, syllabication. Continue to spell difficult words in all class exercises.

Writing.—Practice paper and copy-book. Continue analysis of letters and rules for spacing. Watch position and give much practice on movement exercises.

Arithmetic.—Finish review of common fractions. Teach how to read and write decimals. Show that a decimal fraction has a numerator

and a denominator, and that each of these terms is a *whole* number. See that the decimal point is always written. Change common fractions to decimals and decimal fractions to common. Show effect of annexing ciphers, or of removing them from the right of a decimal.

Grammar.—Nouns. Make list of nouns and use in short sentences. Point out the common nouns; proper nouns; singular and plural forms. Classify use in sentence, as subject, object, predicate, possessive. Watch the use of capitals and punctuation marks.

Geography.—North America as a whole. Location and outline. Location of boundary oceans. Coast line; principal forms of land and water located. Mountain systems; drainage slopes and basins; principal rivers and lakes. Political division. Animal and vegetable life. Climate. Make daily use of outline map.

Observation Lessons.—Talk about wild animals that live in the water; in the air; in the mountains; in the jungles; in torrid regions; in polar regions. Tell how they are of use to man; how they are an injury to man.

Physiology and Hygiene.—Circulation. Heart, arteries, veins, capillaries. Relation of food to blood. How new blood reaches heart; heart as an engine; return of blood from capillaries. Effects of alcohol; does not create heat, but a rush of blood to the surface and a chill by reaction; stimulates instead of strengthening, and produces weakness as a final result; creates a growing appetite for something stronger; very dangerous to tittle with, as it will overcome the best resolves and intentions.

Oral History.—Talk and read about the Indians; why so called; manners and customs. The Northmen; where they lived; their claim to the discovery of America. The Mound Builders; what we know about them.

THIRD MONTH.

Reading.—About twenty pages. Silent sight reading should be carefully cultivated. See that pupils read well their own composition. Teacher frequently read English classics, fables, and fairy tales. Let pupils read same.

Spelling.—Eight or ten pages of speller. Teach formation of plurals. Let spelling be oral, phonic, and written.

Writing.—Practice paper and copy-book. Continue practice of calling letters by the number of the principles, and let the pupils discover the letters or words. Do not give more than one minute at a time to this exercise.

Arithmetic.—Teach addition, subtraction, multiplication and division of decimals. Give especial attention to pointing off in division. Give frequent drills of this kind: $10 \div .1 = ?$; $.01 \div 10 = ?$; $1,000 \div .0001 = ?$; $.0001 \div 1,000 = ?$ These are excellent tests of the pupil's understanding of division, the most difficult part of decimals.

Grammar.—Verbs. Make a list of common verbs. Divide into present, past and future. Construct sentences using these words. Drill upon forms of irregular verbs. Develop transitive verb. Compare effects of adding *s* to a noun and to a verb. Elements of the sentence.

Geography.—United States as a whole. Follow suggestions for North America.

Observation Lessons.—Talk about gold, silver, nickel, copper, tin, iron, lead, coal, coal-oil. Where they are found; how they are procured; for what they are used. Use objects when obtainable.

Physiology and Hygiene.—How the blood reaches lungs; structure of lungs; air cells and oxygen; how impure blood is made pure; need of pure air; necessity of plenty of lung room; how this room may be abridged.

Oral History.—Stories. The discovery of Florida, and the fountain of youth; first view of the Pacific; first voyage around the world; discovery of the Mississippi; Cortez and Montezuma; Sir Walter Raleigh and his fate; Queen Elizabeth.

FOURTH MONTH.

Reading.—About twenty pages. Practice upon determining the meaning of words from the context. The meaning of phrases and sentences should be considered as well as the meaning of words. Give frequent drills on difficult combinations of consonant sounds.

Spelling.—Eight or ten words in speller. Use words in sentences to test pupils' knowledge of meaning. Continue to keep list of words frequently misspelled, and give daily practice upon them.

Writing.—Practice paper and copy-book. Secure good movement, rapidity and correct form. Do not attempt to hear other recitations while the writing exercise is in progress.

Arithmetic.—Percentage. Help pupil to a clear conception of the meaning of such expressions as 6 per cent, 10 per cent, etc. Let him change to form of common fraction, thus: 6 per cent = $\frac{6}{100}$. Learn the meaning of terms base, per cent and percentage. Show that when any two of these terms are given the other one can be determined. Give exercises for practical proof. In solving problems, have pupils first decide what two terms are given and what one is to be found. Teach process by analysis rather than by formula.

Grammar.—Adjectives. Make list of adjectives in common use. Use in sentences. Classify descriptive and definite; the articles, use of *a* and *an*. Point out adjectives in reader. Modify subject, object, possessive, predicate noun. Use in predicate with copulative verb. Make easy comparisons.

Geography.—Northern section. Read text and study maps. Location and boundaries. Name and locate two or three principal mountains, capes, islands, rivers, lakes, bays, cities. Capitals and metropolis.

Compare industries: farming, manufacturing, mining, lumbering, stock-raising, dairying, fishing. Historical events and matters of interest connected with places. Take imaginary voyages, speaking of matters of interest, scenery, soil, climate, etc. Frequent reviews and repetitions. Map drawing.

Observation Lessons.—Talk about sugar, rice, tea, coffee, oranges, lemons, bananas, raisins, pine-apples. Where they grow; how they grow; how used; how prepared for use. Have objects before class, if possible.

Physiology and Hygiene.—The brain; where it is located; how protected; general office; relation to nerves. Effects of alcohol: absorbs water from the nervous tissues, exciting and finally hardening them; produces stimulation at first, afterwards want of power; first effects on the mind are, a feeling of pleasure, strength or brightness; ultimate effects, unsettles and finally overcomes perception and reason, impairs memory, abnormally excites the imagination, blunts the finer sensibilities, arouses the passions, and enslaves the mind.

Oral History.—Tell or read the story of Captain John Smith; Pocahontas; the Mayflower; the Pilgrims; Miles Standish; the negro in Virginia.

FIFTH MONTH.

Reading.—About twenty-five pages. Each pupil should frequently have an opportunity to read an entire selection to teacher and class. This will give pupils power in continuous reading and a love for reading that is not sufficiently cultivated by the usual class exercise of reading only a sentence or paragraph.

Spelling.—Eight or ten pages of speller. Give drills upon accent, primary and secondary. Give dictation exercises.

Writing.—Practice paper and copy-book. See that each pupil does his best. Give individual instruction and criticism; general directions for avoiding common errors.

Arithmetic.—Simple interest. Show that interest is an application of percentage, time being considered. Explain how money is loaned, what interest is and how it is counted. Explain note, security, etc., in the process of borrowing money. To pupils of this class teach only one method of computing interest.

Grammar.—Personal pronoun. Find pronouns in reader. Find nouns for which they stand. Read, substituting noun antecedents for personal pronouns. Use in sentences as subject, predicate, object, possessive. See that pupils can name all the personal pronouns.

Geography.—Northeastern section. Follow suggestions for northern section.

Physiology and Hygiene.—Talk about saliva, gastric juice, bile, tears, perspiration. By what organs produced; functions. Some of the

fearful consequences of the excessive use of alcohol are: neglect of business; neglect of family; loss of self-respect; bad company; dishonesty; crime; insanity; delirium and death. The milder drinks, beer, wine, hard-cider, etc., all contain alcohol and are injurious, as a beverage, in proportion to the amount of alcohol they contain.

Oral History.—Tell or read the story of the Salem witchcraft; Roger Williams; the Quakers; William Penn; Massasoit; the Pequods.

SIXTH MONTH.

Reading.—About twenty-five pages. Use every means to counteract any tendency to mechanical and monotonous reading. This is usually caused by a lack of understanding and a lack of interest; hence, to cure the evil, strike at the cause. It is of much importance that the teacher should thoroughly understand the lesson before attempting to interest the pupil in it.

Spelling.—Eight or ten pages in speller. Teach meaning and use of some of the most common prefixes. Teach the diphthongs *ou*, *ow*, *oi*, *oy*, and their sounds.

Writing.—Practice paper and copy-book. Do not let a pupil write at a desk that is too high or too low for him. Select seats suitable to the size of pupils.

Arithmetic.—Review percentage and interest, giving many practical examples not found in text-book in use. Review decimals if necessary.

Grammar.—Adverb. Make list of adverbs showing *how*, *when*, and *where*, and use in sentences. Point out adverbs in reader, and classify as denoting *time*, *place*, and *manner*. Find what they modify, and show whether the modified words are verbs, adjectives, or adverbs.

Geography.—New England. Follow suggestions for northern section.

Observation Lessons.—Talk about birds that swim; birds that wade; birds that sing; birds that talk; birds that migrate; birds that carry messages; birds as pets; birds of the night; birds that frequent the yard, garden, barn. Proper treatment of birds and their nests.

Physiology and Hygiene.—Talk about joints. Use of joints. Different kinds; where each kind is found; how oiled. Care of the hair and the nails. Tobacco: contains nicotine, a powerful poison. Effects upon the young; produces nausea; affects appetite and digestion; affects heart beat; taints the blood; deranges the nerves.

Oral History.—Tell or read the story of the burning of Acadia; Washington and Dinwiddie; Braddock's defeat; the Charter Oak; the Boston Tea Party; the Stamp Act; battle of Lexington; Minute men. Patrick Henry, and other colonial heroes. Read Paul Revere's Ride, and other stirring stories.

SEVENTH MONTH.

Reading.—About twenty-five pages. Let pupils occasionally read a paragraph in a loud whisper, to improve articulation. Let pupils point out places in lesson where words would likely be run together by a careless reader. Test pupil's reading of the same.

Spelling.—Eight or ten pages of speller. Teach some of the most common suffixes. Practice spelling by sound and determining silent letters.

Writing.—Practice paper and copy-book. Be systematic and orderly in distributing and collecting pens, ink and copy-books. Have a place for everything and everything in its place.

Arithmetic.—Measurements. Consider surface, the square, the rectangle. Show what area is, and how to find it. Take up solids; the cube. How cube differs from square, and how to find solid contents of cube; area of faces. Wood measure. Show what a cord is, and how to find number of cubic feet in a cord. Give many practical examples under each subject.

Grammar.—Prepositions. Make list of common prepositions and use in sentences. Show relation. Point out prepositions in reader and determine relations. Show that the preposition and its object form a phrase; find what the phrase modifies; adjective or adverbial.

Geography.—Plateau section. Follow suggestions for northern section.

Observation Lessons.—Talk about trees that produce food for man; for other animals; lumber for building material; lumber for furniture; medicine; gutta percha; turpentine; spices; coloring stuffs. Where they grow; general characteristics; how products are obtained and prepared for use.

Physiology and Hygiene.—Muscles. Number, purpose, kinds, structure, contraction. Alcohol causes muscles to become fatty. General effects of tobacco; acts injuriously upon the nervous system and vital organs; enervates the body and mind; forms a slavish, untidy habit; gives the breath an offensive odor; discolors the teeth; frequently leads to the drink habit.

Oral History.—Tell or read about the Revolutionary War; the Declaration of Independence; the Liberty Bell; Continental Congress; George Washington, and other noted patriots.

EIGHTH MONTH.

Reading.—About twenty-five pages. Teacher frequently read to pupils parts of books that he would lead them to read. Cultivate home reading. Put suitable selections or books into the hands of pupils for home reading; let them tell and talk about what they have read.

Spelling.—Eight or ten pages of speller. Teach a few common practical rules for spelling. Drill upon marking and naming the different sounds of *a, e, i, o, u, y*.

Writing.—Practice paper and copy-books. Occasionally let pupils copy short paragraphs and stanzas to test progress.

Arithmetic.—Review subjects least understood.

Grammar.—Conjunctions and interjections. Teach use of *and* and *or* in simple sentences. Show that they connect words of the same kind. Find these conjunctions in reader; show what they connect. Make list of common interjections. Show use and proper punctuation.

Geography.—Pacific section. Follow suggestions for northern section.

Observation Lessons.—Bring flowers into the school room; talk about and explain the use of the different parts; calyx, corolla, stamens, pistils, sepals, petals, anthers, pollen. Examine leaves; compare shape of different kinds; use of leaves.

Physiology and Hygiene.—Talk about mineral foods: water, salt, lime, iron, etc.; tissue-making foods: milk, eggs, meats, grains, etc.; heat-producing foods: fats, oils, starch, sugar, etc. Alcohol not a food. Cigarettes worse than pipe or cigar; smoke of wrappers irritates the lungs; made of bad tobacco and harmful drugs; cigarette smokers usually inhale the smoke.

Oral History.—Read interesting chapters on the Civil War, Emancipation Proclamation, Negro Slavery; Abraham Lincoln, and other noted statesmen and heroes.

TESTS FOR PROMOTION.

Reading.—Ability to read with proper expression any selection in the reader so far as studied; to give substance of what has been read; to give meaning of words from context; to explain allusions in lesson; to recite choice selections.

Spelling.—Should be able to spell well, especially in examinations and exercises in which the mind is occupied with other matter, thus showing that correct spelling has become a habit.

Writing.—Same as last year, with marked improvement in form and symmetry of hand.

Arithmetic.—Ability to handle simple and compound numbers, common and decimal fractions in a general way; to solve examples involving easy combinations in percentage, simple interest, and measurements; to define arithmetical terms frequently used, to give an ordinary statement of the steps in processes.

Grammar.—Ability to determine parts of speech in selections from reader; to tell their uses in sentences; to analyze simple sentences; to use capitals and punctuation marks correctly; to write a neat letter, in correct form.

Geography.—A knowledge of the principal facts in mathematical geography, of the physical and political geography of North America,

and especially of the United States. Ability to locate on the map the principal places and things taught, and to draw maps locating the principal geographical features.

Physiology and Hygiene, Observation, History.—A general knowledge of the subjects taught.

Grammar Grade.

SECOND YEAR.

WHAT PUPILS SHOULD HAVE.

Fourth reader, spelling book, the primary or other good dictionary, complete arithmetic, mental arithmetic, elementary grammar, elementary geography, copy-book, pen, ink, slate, pencil, ruler, practice paper, and drawing book.

WHAT TO TEACH.

Reading.—Last half of fourth reader, with supplementary reading. One recitation daily.

Spelling.—Spelling book, and new or difficult words in all recitations.

U. S. History.—Beginner's history finished.

Writing.—Copy-book and practice paper.

Arithmetic.—Complete arithmetic to decimal fractions.

Mental Arithmetic.—See suggestions in first month.

Grammar.—Elementary book finished.

Geography.—Elementary book finished.

Physiology and Hygiene, Observation Lessons.—See suggestions in last year's work.

Drawing.—Follow directions in drawing book No. 6.

FIRST MONTH.

Reading.—Object, to gain thought from printed page; to express the thought clearly, forcibly, and agreeably to the hearer; to enlarge vocabulary; to cultivate a taste for good reading.

Commence about the middle of fourth reader, thus reviewing for a short time lessons previously read. Follow suggestions for fifth year's work. About twenty pages.

Spelling.—Recite with fifth year class.

Writing.—Same as fifth year.

Arithmetic.—Commence at first of complete arithmetic. Insist upon accurate definitions and correct use of terms. Notation, numeration, addition, subtraction. Teach numeration to six periods. The local value of figures. Practice adding long columns. Write numbers in the Roman notation. Drill for accuracy and speed in addition. Teach proof in subtraction.

Mental Arithmetic.—Beginning with this year the subject of mental arithmetic should be taught daily from the text-book. It is suggested that when the topic admits of it, the lesson in mental arithmetic precede the written arithmetic lesson on that particular topic. The subject is not sub-divided into years' or months' work. The intelligent teacher will understand what particular exercise or topic will be most beneficial at any particular time.

The attention of teachers is respectfully solicited to the following methods of recitation. Some of them are preferable to others, but all may occasionally be used with advantage:

COMMON METHOD.—By this method the problems are read by the teacher and assigned promiscuously, the pupils not being permitted to use the book during recitation, nor retain the conditions of the problems by means of pencil and paper, as is sometimes done. The pupil selected by the teacher arises, repeats the problem and gives the solution, at the close of which the mistakes that may have been made should be corrected by the class or teacher.

SILENT METHOD.—By this method the teacher reads a problem to the class, and then the pupils silently solve it, indicating the completion of the solution by the upraised hand. After the whole class, or nearly the whole class, has finished the solution, the teacher calls upon some member, who arises, repeats the problem and gives the solution, as in the former method.

By this method the whole class must be exercised upon every problem, thus securing more discipline than by the preceding method. It, however, requires more time than the first, hence not so many problems can be solved at a recitation. We prefer the first method for advanced pupils, and the second, at least a portion of the time, with younger pupils.

CHANCE ASSIGNMENT.—This method differs from the first only in the assignment of the problems. The teacher marks the number of the lesson and the number of the problem upon small pieces of paper, which the pupils may take out of a box passed around by the teacher, or some member of the class. The teacher then, after reading a problem, instead of calling upon a pupil, merely gives the number of the problem, the person having the number arising, repeating and solving it. By this method the teacher is relieved of all responsibility with reference to hard and easy problems, and it is also believed that better attention is secured with it. It is particularly adapted to reviews and public examinations.

DOUBLE ASSIGNMENT.—By this method the pupil who receives the problem from the teacher arises, repeats it and then assigns it to some

one else to solve. It may be combined with either the first or second methods. The objects of this method are variety and interest.

METHODS BY PARTS.—By this method different parts of the same problem are solved by different pupils. The teacher reads the problem and assigns it to a pupil, and after he has given a portion of the solution, another is called upon, who takes up the solution at the point where the first stops; the second is succeeded in like manner by a third, and so on until the solution is completed. The object of this method is to secure the attention of the whole class, which it does very effectually. It is particularly suited to a large class consisting of young pupils.

UNNAMED METHOD.—By this method the teacher reads and assigns several problems to different members of the class, before requiring any solutions, after which those who have received problems are called upon in the order of assignment for their solutions. The advantages of this method are, first, the pupil having some time to think of the problem, is enabled to give the solution with more promptness and accuracy, and, secondly, the necessity of retaining the numbers and their relations in the mind for several minutes affords a good discipline to the memory.

CHOOSING SIDES.—This is a modification of the old spelling-class method, and is one calculated to elicit a very great degree of interest. By it two pupils, appointed by the teacher, select the others, thus forming two parties for a trial of skill, as in a game of cricket or base ball. The problems may be assigned alternately to the sides, by the teachers, by chance, by the leaders of the sides, or in any other way that may be agreed upon by the teacher and class.

In regard to these methods, the first, second and third are probably the best for the usual recitations, but the other methods can very profitably be employed with younger classes, or, in fact, with any class, to relieve monotony and awaken interest. With advanced pupils we prefer the first method, or the first combined with the third.—*From Brooks' Methods of Instruction.*

Grammar.—Review parts of speech. Give special attention to their properties. Teach formation of possessives, singular and plural. Show advantage of learning the declension of personal pronouns. Let the pupil understand that *I* is *always* nominative, *me* always objective, *you* always plural in form, and when subject, always requiring a plural verb. Comparison of adjectives and adverbs.

NOTE.—The following simple rule for forming possessives may be helpful: Spell the word correctly either singular or plural, in the common or nominative form; add the apostrophe; add *s* if the common form does not end in *s*.

Geography.—Review map of United States as a whole. Review map of Arizona and county map.

U. S. History.—Columbus, the Cabots, Balboa, Ponce de Leon and De Soto, and Sir Walter Raleigh.

SECOND MONTH.

Reading.—About twenty-five pages. Have lesson carefully prepared. Do not allow pupils to assume that the reading lesson requires no preparation. Whether they do or not depends upon how the teacher conducts the recitation.

Spelling.—Recite with fifth year class.

Writing.—Same as fifth year.

Arithmetic.—Multiplication and division. Learn rules and methods of proof. How to divide and multiply by 10, 100, etc., also by other numbers ending in ciphers, as 20, 1,200, etc. Multiply and divide by factors. Show that multiplier and divisor are abstract numbers. How the denominations of multiplier, quotient and remainder are determined. Call attention to the importance of addition, showing that when the multiplier consists of two or more figures it usually requires more additions than multiplications, to secure a product.

Grammar.—Distinguish between relative and interrogative pronouns. Teach pupils to name the few words used as each. Show that the antecedent of the relative pronoun is nearly always expressed, and require pupils to find it. Show relation of pronoun to antecedent. Drill upon the case of pronouns in the reader.

Geography.—Canada, Alaska, Newfoundland, Mexico, West Indies. Location. Boundaries. To what country it belongs. Political divisions. Principal productions. Principal rivers, mountains, cities. Inhabitants. Questions on map. Map drawing. Oral instruction.

U. S. History.—Capt. John Smith, Henry Hudson, Miles Standish, Lord Baltimore, Roger Williams.

THIRD MONTH.

Reading.—About twenty-five pages. Do not let the pupil depend upon the teacher to pronounce words for him while reading. He can now use the dictionary, and finding the pronunciation of words is just as much the work of preparing the reading lesson as finding the meaning of words.

Spelling.—Recite with fifth year class.

Writing.—Same as fifth year.

Arithmetic.—Properties of numbers; cancellation. Give many practical examples, and require oral as well as written solutions.

Grammar.—Special attention to the properties of verbs: mode, tense, person, number. Regular or irregular, transitive or intransitive, active or passive.

Geography.—General review of North America.

U. S. History.—King Philip, William Penn, Oglethorpe, Franklin, George Washington.

FOURTH MONTH.

Reading.—About twenty-five pages. Pay attention to more precise articulation. More drill upon difficult consonant combinations.

Spelling.—Recite with fifth year class.

Writing.—Same as fifth year.

Arithmetic.—Factoring, greatest common divisor, least common multiple. See that pupil understands the difference between divisor and multiple. Determine at sight all prime numbers to 100. Teach how to find greatest common divisor and least common multiple by factoring. Show difference in selecting factors for greatest common divisor and least common multiple.

Grammar.—Phrases. Let pupils find all the phrases in a reading lesson. Find what each modifies. Show that most phrases are used either as adjectives or as adverbs. Parse single words as well as phrases.

Geography.—South America. Position, form, natural boundaries, surface, drainage, climate, productions, occupations, political divisions, capitals and metropolises. Questions on map. Map drawing.

U. S. History.—Daniel Boone, Robertson, Sevier, General Clarke.

FIFTH MONTH.

Reading.—Twenty-five pages or more. Select interesting short stories and let pupil read a whole one as a test of sight reading. Teacher read story and let pupils reproduce for next day.

Spelling.—Recite with fifth year class.

Writing.—Same as fifth year.

Arithmetic.—Reduction of compound or denominate numbers. Have tables and abbreviations mastered. Teach the common units of different measures. Show that the multipliers and divisors used in reduction are abstract. Require pupils to mark denominations in their processes of reduction. Read examples and let pupils determine whether reduction ascending or descending is required, thus: 240 bushels reduced to pints; 160 pints reduced to gallons. Teach board measure. (See note under fifth month, fourth year.)

Grammar.—Clauses. Difference between principal and subordinate clauses. Find clauses in reader and show whether principal or subordinate. Show that subordinate clauses are used as nouns, adjectives, or adverbs. Parse them as wholes.

Geography.—Europe. See outline for South America.

U. S. History.—Putnam, Whitney, Jefferson.

SIXTH MONTH.

Reading.—Twenty-five pages or more. Study the historical, biographical, and geographical references in the lesson. Refer to the figur-

ative language. Teach the meaning of words, but do not neglect the meaning of sentences.

Spelling.—Recite with fifth year class.

Writing.—Same as fifth year.

Arithmetic.—Addition, subtraction, multiplication, division of denominate numbers. Longitude and time. See that pupil has a clear conception of longitude and latitude. Compare time east with time west. Standard time. Carpeting floors and papering walls.

Grammar.—Sentences: simple, compound, and complex. Classify sentences found in reader. Parse phrases and words.

Geography.—Asia. See outline for South America.

U. S. History.—Fulton, Harrison, Jackson.

SEVENTH MONTH.

Reading.—Twenty-five pages or more. Use easy English classics or supplementary reading, *Youth's Companion*, and current events in daily and weekly papers. Require pupils to write paraphrases of short pieces of poetry, being careful to secure good prose.

Spelling.—Recite with fifth year class.

Writing.—Same as fifth year.

Arithmetic.—Addition and subtraction of common fractions. Definitions thoroughly learned. Give much practice in all processes. Require pupils to find least common denominator by inspection, when numbers are not too large; encourage mental work, results only being put on slates. In addition and subtraction of mixed numbers, require pupils to use them as mixed numbers instead of reducing to improper fractions; write in columns same as whole numbers.

Grammar.—Analysis of simple sentences. Parsing. Make much use of readers.

Geography.—Africa. See outline for South America.

U. S. History.—Morse, Houston, Gray, Lincoln.

EIGHTH MONTH.

Reading.—Finish reader and review. In review, let class read several pages at each recitation.

Spelling.—Recite with fifth year class.

Arithmetic.—Multiplication and division of common fractions. Compare effects of multiplying and dividing the numerator by the same number; same with denominator; same with both terms. Show why a fraction is multiplied by multiplying numerator or dividing denominator; why divided by dividing numerator or multiplying denominator. Simplify the statement of a complex fraction by expressing it with the (\div) division sign. Review fractions.

Grammar.—Analysis of short compound and complex sentences. Parse phrases and clauses as wholes. Use reader.

Geography.—Oceania. See outline for South America. Review.

U. S. History.—Leading generals and statesmen since civil war.

TESTS FOR PROMOTION.

Reading.—Ability to read with proper expression any lesson in fourth reader; to tell what has been read, using fairly good English; to determine meaning of words from context; to explain allusions in the lesson; to recite choice selections.

Spelling.—All written work should show good spelling.

Writing.—Same as last year, with marked improvement in form and symmetry of hand.

Arithmetic.—Ability to read, write, add, subtract, multiply, divide, and reduce simple and compound numbers, and common fractions; to solve practical examples without reference to book; to give definitions of terms; to explain the steps in the solution of problems.

Grammar.—Ability to determine parts of speech in reading lesson; to name their properties; to point out phrases and clauses, and to give their uses; to analyze short sentences.

Geography.—A knowledge of the principal facts in the physical and political geography of the different countries; a detailed knowledge of the geography of the United States, the Territory of Arizona and the county in which we live; ability to draw outline maps and to locate thereon the principal geographic features of the place.

Physiology and Hygiene.—A fair knowledge of the subjects taught.

Observation.—A fair knowledge of the subjects taught.

History.—A fair knowledge of leading soldiers and statesmen.

Grammar Grade.

THIRD YEAR.

WHAT PUPILS SHOULD HAVE.

Fifth reader, spelling book, academic dictionary, complete arithmetic, mental arithmetic, grammar, geography, physiology, history, copy-book, pen, ink, slate, pencil, ruler, practice paper and drawing book No. 7.

WHAT TO TEACH.

Reading.—Fifth reader, with supplementary reader. One recitation daily.

Spelling.—Spelling book, and new or difficult words in all recitations.

Writing.—Copy-book and practice paper.

Arithmetic.—Complete arithmetic, from common fractions to involution.

Grammar.—Text-book. Etymology.

Geography.—Advanced geography. Mathematical geography, North America, and South America.

Physiology.—Text-book and chart.

History.—To constitutional period.

Drawing.—Finish drawing book.

FIRST MONTH.

Reading.—Fifth reader. Seventh and eighth year classes recite together. The teacher will refer to what has been said in the fourth reader grades, and utilize all suggestions that are applicable to this year's work. Keep constantly in view the true object in reading, and do not allow the recitation to drift into a dull, thoughtless, monotonous routine of calling words. Lead pupils to an appreciation of the best authors by interesting them in fine passages, beautiful thoughts, and oft-quoted phrases. Interest pupils in authors by reading interesting parts of their biography.

Spelling.—Commence about page 50 in speller. Continue the practice of having the difficult words in all exercises spelled. Classify words as simple and compound, primitive and derivative. Teach use of hyphen in compound words, leading pupil to depend upon dictionary when he is not certain as to use of hyphen. Teach rule for final e, with practice on its application.

Writing.—Copy book and practice paper. Exercises in correct form of letters, and uniformity in height, slant, and spacing. Movement exercise.

Arithmetic.—Review common fractions. Decimal fractions. Require all definitions and principles to be thoroughly learned. Supply much work not found in text-book in use. Train pupils to tell what they do and why they do it.

Grammar.—Study definitions and terms, and show applications. Rules for capital letters. Use of italics and small capitals. Classes of nouns. Phrases and clauses used as nouns. Properties of nouns. Rules for formation of plurals. Case and construction. Rules for possessives. In parsing nouns give most attention to construction, that is, use in sentence, whether subject, predicate, object, possessive,

appositive; case, and why. Practice in reader. Require written compositions regularly once a month, using subjects in geography, history, and commonplace matters.

Geography.—The earth as a whole. Shape and size. Circles. Latitude and longitude. Motions of the earth. Day and night. Change of seasons. Tropics and polar circles, where located, and why. Equinoxes and solstices; explain these terms. Line of illumination shown on globes or blackboard at each of above dates. Zones. Divisions of land and water. Forms of land and water. Climate. Atmosphere. Winds. Races of men. Forms of government. Social conditions. Questions on map of hemispheres.

Physiology.—The skeleton. Use of bones; of cartilage. Bones of the skull, trunk, upper extremities, lower extremities. Nice adaptation to their use. Why most bones are hollow. Why skeleton is composed of many bones. Tendons. Vertebræ. How skull is joined to backbone. Sutures. How bones are nourished. How bones of children differ from bones of adults. How broken bones heal; why they must be "set;" use of "splints." Alcohol as a medicine. Should be taken, like other dangerous medicines, only under direction of physician. Alcohol in the arts and sciences.

NOTE.—Many schools are supplied with charts. Use these in connection with text-book. Give frequent oral and written reviews on chart.

History.—Geographical ideas of the fifteenth century. Show what effect the following had on the discovery and settlement of America: printing press; revival of learning; the reformation; persecution; compass and astrolabe; water route to India. Marco Polo. Northmen and their discoveries. Indians: clans and tribes, locations, characteristics, mode of living. Mound builders.

Do not allow pupils to prepare the lesson by committing it to memory. Interest them in the facts of history.

SECOND MONTH.

Reading.—Give oral drill in expression by paragraphs, then let entire lesson be read by individual pupils. Occasional exercises in concert reading may be practiced, but do not form a habit of conducting classes in this way. Use all exercises for voice culture that are found in the reader, and give such additional drills as are helpful.

Spelling.—About twelve pages in speller. Rules for formation of plurals and much practice on application of the rules. Make lists of abbreviations and let pupils write words in full. Carefully watch the spelling in all written work.

Writing.—Look closely after position, form, movement, speed. Do not confound carelessness with rapidity. Do not allow the pupil to draw the letters in order to secure correct form. Combine speed with form and neatness.

Arithmetic.—Ratio, simple proportion, compound proportion. See that pupils understand the meaning of terms and their relation. In proportion show that when any three terms are given the fourth can be found. In compound proportion train the pupil to reason from what was done to what is proposed to be done. If properly taught the pupil will state and solve a problem in compound proportion with as much confidence and accuracy as he adds a column of figures or secures a quotient in long division. Provide many examples not found in textbook.

Grammar.—Verb. Transitive, intransitive, copulative. Show how they differ. Take time to practice much in reader. Regular and irregular. See that pupil understands the rule for adding *ed*. Voice. Have pupils classify verbs in reader as active, passive, neuter. Let them rewrite the sentences, changing active to passive, passive to active. Teach forms of the different participles. Show that participles are generally used as adjectives, nouns, or principal verbs. Teach the distinctive characteristic of each mode and tense.

Geography.—North America and United States as a whole.

1. Position; form; size.
2. Natural boundaries.
3. Coast lines—smooth or indented; forms of land and water.
4. Surface—mountain systems, ranges, peaks, hills, trend; valleys, plains, plateaus.
5. Drainage—river systems, water-sheds, basins; lakes' outlets, inlets.
6. Climate—temperature, moisture, elevation, mountain ranges, location as inland or seaboard, winds, rainfall, ocean currents.
7. Productions—animal, vegetable, and mineral.
8. Occupations—agriculture, stock-raising, manufacture, commerce, mining, lumbering, fishing.
9. Political divisions—boundaries, highlands and lowlands, rivers and lakes, coast line, principal cities and towns (noted for what industries, what historical events), government, characteristics and social condition of people.
10. Questions on map and map drawing. Use map of North America.

Physiology.—Joints and muscles. Structure of hip joint. Ball and socket joints. Hinge joints. Pivot joints. Use of cartilage and ligaments. Synovial fluid. Dislocations and sprains.

Kinds of muscles. Use of muscles. Contraction the leading characteristic of muscles. How controlled. Voluntary and involuntary. Tendons and their use. Results if tendons were elastic. Exercise a developer of muscle. Alcohol and fatty degeneration of the muscles. Effects of alcohol and tobacco on the heart.

History.—Columbus. Ferdinand and Isabella. Compare the three ships of Columbus with modern ocean steamers. Discovery of the New World. The several voyages. How America was named. Leading Spanish explorers; what each discovered; territorial claims of Spain.

Leading French explorers; what each discovered; territorial claims of France. Leading English explorers; what each discovered; territorial claims of England. The Dutch, and what they claimed. Show how these claims overlapped. Teach only principal dates by associating with leading events. Locate all historical places on the map. See that pupil has access to one or more reference books and interest him in consulting them.

THIRD MONTH.

Reading.—Look carefully to emphasis and inflection as very important elements of oral expression. Give drill to secure distinct articulation and clear enunciation. Continue on difficult consonant combinations.

Spelling.—About twelve pages. Continue on rules for plurals. Make a promiscuous list of words and their synonyms; require pupils to write the words in two columns, putting those of similar meaning opposite each other. Use the words of the first column in sentences; substitute the words of the second column; see whether pupil can detect any difference in meaning.

Writing.—See that only the very best work is done in the copy-book. Teacher should make continual use of the board in teaching writing, even though he does not write an excellent hand himself.

Arithmetic.—Percentage, profit and loss. Show relation between percentage and profit and loss. Compare terms used in each. In the solution of problems, teach pupils to determine base, rate, percentage; cost price, selling price, profit, loss, before attempting solution. After he determines the above points, be sure he knows how to proceed. The best test is to give problems not found in text-book, and with answers not known to pupils.

Grammar.—Verb continued. Give careful drill in conjugation. Teach pupils to compare the various forms in conjugation, and to detect the shade of difference expressed by the use of different auxiliary verbs, as in the sentences: *I have been*, and, *I had been*; *we shall go*, and, *we will go*; *he may sing*, and, *he can sing*. Drill upon the different forms of the verb *to be* until pupil knows them at sight. Show that some form of the verb *to be*, as an auxiliary, with the perfect participle of a transitive verb, *always* shows passive voice, and that the passive voice *cannot* be expressed without the verb *to be* with the perfect participle. Lay much stress upon the office of the individual auxiliary verbs in the sentence. For example: *The letters may have been written*. Show that *written* is the principal verb; *may have been*, auxiliaries. Give principal parts of *written*, showing that it is the perfect participle and irregular. *Been*, a form of the verb *to be*, shows passive voice with the perfect participle *written*. *Have* denotes perfect, or completed, tense. *May*, present tense, potential mode. The subject *letters* shows that the verb is third person plural. The verb *may have been written* has, now been completely and intelligently parsed, and we have discovered that it is irregular, transitive (because it has voice), passive voice, potential mode, present perfect

tense, third person, singular number. Give much practice of this kind in reader. Teach use of *shall* and *will*. Show that the progressive form of the verb can never be passive, since its principal verb is the *present* participle instead of the *perfect* participle.

Geography.—Northeastern section. Northern section. Questions on map. Associate geography and history.

Physiology.—Food. Why we need food and drink. Why the body is warm. Uniform temperature of the body. Effect of starvation on the muscles. Hibernation of some animals. Fat as reserve supplies in sickness. What foods must contain. Albuminous foods. Fats and oils. Mineral foods. Office of each. Advantages of a variety of animal and vegetable food. Why foods are cooked. How food reaches the blood. Assimilation. Effects of over-eating; of going to work immediately after eating a hearty dinner; of retiring for the night immediately after a hearty supper. Time necessary for digestion. Alcohol as a food; as a drink.

History.—Early attempts at colonization by the French, Spanish, English. The Huguenots. St. Augustine and Santa Fe. Gilbert and Raleigh.

Settlement of Virginia. London company. Jamestown. John Smith. Culture of tobacco. Introduction of slavery. First legislative assembly in the new world.

New York. The Dutch. Henry Hudson. Manhattan Island and New Amsterdam. Patroons. Peter Stuyvesant. The English. Duke of York.

FOURTH MONTH.

Reading.—Require careful preparation of every lesson. Teacher must also prepare for the recitation if he would forcibly bring out the thought of the selection and arouse and maintain an interest in the subject. Interest pupils in home reading, and direct them what to read.

Spelling.—About twelve pages. Teach rule for doubling final consonant, and illustrate with examples. Require pupils to read words and definitions in the dictionary until they understand the signs, abbreviations, diacritical marks, etc., and can read dictionary literature fluently and intelligently.

Writing.—See that pupils are acquiring the habit of good writing. Pay close attention to all manuscript work, and insist upon legibility and neatness in all papers brought to class or handed to teacher.

Arithmetic.—Insurance, customs or duties, capital and stock, taxes. Show application in business and bring illustrations as near home to pupils as circumstances will permit. Give practical problems.

Grammar.—Adjectives and adverbs. Teach the several classes of each. Thorough drill in comparison. Show how and what they modify. How some adjectives may be changed to adverbs. Parse adjectives and adverbs in reader. Select all adjective and adverbial phrases and parse as wholes.

Geography.—Southern, Plateau, Pacific sections. See suggestions for northern section. Questions on the map, and map drawing. Locate places mentioned in the current news of the day.

Physiology.—Digestion. The mouth, teeth, tongue, salivary glands, gullet, stomach, gastric glands, intestines, liver, pancreas. Function of each. Object of digestion. Use of saliva, gastric juice, bile, intestinal juices. Chyme and chyle. Lacteals and other absorbents. Appetite. Care of the teeth. Abuse of the stomach. Diseases of the digestive organs. Proper time to eat. Digestion affected by severe physical or mental exercise. Effects of eating too much and too often. Effects of alcohol upon the appetite, digestion, lining of stomach, liver; tobacco, on the appetite and digestion.

History.—Settlement of Pennsylvania. William Penn. The Quakers. Boundary of Pennsylvania. Treatment of Indians. Philadelphia.

New Hampshire, Connecticut, Maryland, Rhode Island, Delaware, the Carolinas, New Jersey, Georgia.

Show by what class of people settled; about what time; object of settlement; where first settlement was made; government, religion, education, industries.

FIFTH MONTH.

Reading.—Call attention to grammatical and rhetorical pauses. Give phonic drill on subvocals and aspirates. Practice giving the vocal elements their full, round, distinct tones, and teach pupils to see beauty in such tones.

Spelling.—About fifteen pages. Teach the meaning and use of the most common suffixes, not more than one a day. Let pupils make lists of as many as five words containing each suffix. Make application and give definitions. Observe that one *l* is dropped from *full* when used as a suffix. Example: *painful*.

Writing.—Practice upon forms of social correspondence, such as invitations, acceptances, regrets, etc. Show that good capitals add much to the appearance of these forms.

Arithmetic.—Interest: simple, compound and annual. Partial payments. Give practical examples.

Grammar.—Pronouns. Declension of pronouns. Drill on naming all the personal, relative and interrogative pronouns until pupils know them thoroughly. Classify all the pronouns in a reading lesson. Compare personal and relative pronouns. Show that personals usually have a distinct form for person, gender, number and case; relatives do not: relatives are never found in independent sentences, but always in subordinate clauses; personals may be found in each; relatives are always used as connectives, joining subordinate clauses to the antecedent of the relative; personals are never used as connectives. Explain the interrogative in direct questions, as, *who discovered oxygen?* Also, in indirect questions, as, *I know who discovered oxygen.* Show that the relative clause is always an adjective and modifies the antecedent of the relative; that the interrogative clause is always a noun.

Geography.—Canada, Greenland, Mexico, Central America. See suggestions for northern section. Select and preserve the best maps drawn by pupils.

Physiology.—Circulation. Why we need blood. Composition of blood. Coagulation and its value. Quantity of blood in body. The organs of circulation. Functions of each. The heart and vessels connected with it. How the heart is nourished. Arteries, veins, capillaries; their properties and uses. Arterial and venous blood. Lymph. Heart beats and pulse. Daily work of heart. How it rests. Valves. How blood returns in veins. Why no valves in arteries; no pulse in veins. How long it takes blood to complete the circuit. How cold is taken. Why nose frequently runs while taking cold. How to stop bleeding of arteries. Why veins usually stop of their own accord. Effects of alcohol on circulation, blood, heat of body. Why toper's nose is red.

History.—Review and point out on map French and English territorial claims. Note how these claims interfered.

King William's War. Queen Anne's War. King George's War. Causes in Europe; how brought to America; results; treaties.

French and Indian war. Causes. Braddock's defeat. Fort Du Quesne. Capture of Quebec. Indian allies. Treaty of peace. What America gained by the war.

SIXTH MONTH.

Reading.—Interest pupils in favorite authors. Read selections from their best works. Read interesting parts of biography. Commit to memory and recite choice poems. Read loyal and patriotic selections.

Spelling.—About fifteen pages. Teach the meaning and use of the most common prefixes, introducing only one at a time. Practice as with suffixes. Call attention to words in spelling lesson containing such prefixes and suffixes as pupil has learned; pupil define.

Writing.—Practice upon business forms, such as business letters, notes, receipts, applications for positions, etc. Show that flourishing is bad taste in business correspondence.

Arithmetic.—True and bank discount, bonds, exchange. Give practical examples. Do not encourage pupils to figure for answers. Inspire them with confidence in their work.

Grammar.—Prepositions, conjunctions, interjections. Explain that the preposition shows relation from its object to the word modified by the prepositional phrase. Parse phrases as wholes. Show that co-ordinate conjunctions join words to words, phrases to phrases, and sentences to sentences; that subordinate conjunctions join clauses usually to words. Teach use of interjection. Give daily drill in reader.

Geography.—South America. Follow outline for North America.

Physiology.—Respiration. Object of breathing. Larynx, trachea, bronchial tubes, air cells, lungs. Respiratory movements. How the air is renewed in the lungs. Amount breathed daily. The diaphragm and

other respiratory muscles. How oxygen reaches the blood in the lungs. How the impurities in the blood reach the air in the air cells. Changes undergone by the blood in the lungs. Changes produced in air by being breathed. Need of ventilation. How long it will take pupils to breathe all the air in the school room if tightly closed. Results of wearing tight clothes. Bad effects of wearing tight, elastic bands on the limbs. Air tainted with nicotine not pure. Influence of tobacco and cigarettes in youth.

History.—Revolutionary War. Causes, direct and indirect. European idea of a colony and its usefulness. Restrictions in manufacture and trade. Taxation without representation. The stamp act. Tax on tea. Boston tea party. Boston port bill. Quartering soldiers. First continental congress. Benjamin Franklin. King George III. Lexington and Concord. Leading patriots.

Review this period by reading the Declaration of Independence, calling attention to the charges it makes against the mother country, and explain the grounds for those charges.

SEVENTH MONTH.

Reading.—Cultivate power of attention by letting one pupil read a new selection, and require the others to give the substance of what they heard read. Let them try again until they can tell the story in good, easy language.

Spelling.—About fifteen pages. Let class prepare lists of nouns from lessons in geography, physiology, and history; drill on spelling these lists. When spelling lesson is written, see that proper names begin with capitals, all others with lower-case letters.

Writing.—Practice upon forms for letters of friendship, and for addressing envelopes. Impress upon the pupil that only plain writing should appear upon an envelope that must go through the mail.

Arithmetic.—Equation of payments, partnership, average of accounts, brokerage. Explain the character of the business in each, and give practical examples.

Grammar.—Use reader. Select all subordinate clauses. Show whether used as subject, predicate, or modifiers, and parse as wholes. Select all the phrases, show whether used as subject, predicate, or modifiers, and parse as wholes. Commencing with the first word, parse every word as it occurs, each pupil parsing the word that comes to him.

Geography.—South America continued. Study each country of South America by outline for North America.

Physiology.—Nervous system. Nerve centers and nerve fibers. Uses of each. Nerve force. Compare nerve center to electric battery; nerve fiber to telegraph wire; nerve force to electric force. The brain and spinal cord as nerve centers. Divisions of the brain and the function of each. Cranial and spinal nerves. Pairs of nerves. Sensory and motor nerves. Sympathetic nervous system. Use of pain. Reflex

action. How repetition forms habit. How tipping forms the drink habit. The only safe way to avoid forming bad habits. Effects of alcohol on the nerves, brain, and will power.

History.—Revolutionary War continued. The Bunker Hill campaign; evacuation of Boston. Long Island campaign; retreat from New York through New Jersey; surprise at Trenton. Brandywine campaign; Philadelphia captured; Germantown; Valley Forge. The Hudson campaign; capture of forts on Lake Champlain; Bennington; Burgoyne's surrender. Arnold's treason. Capture and execution of Andre. Southern campaign: Marion, Sumter, Pickens, Greene's retreat. Surrender at Yorktown. Independence won.

Whigs and Tories. Foreign aid: France, Holland, Poland. Prominent leaders: English, American, foreigners assisting Americans. Treaty of peace. Summarize important events.

EIGHTH MONTH.

Reading.—See that all historical, geographical, literary, and scientific allusions are understood. Give exercises for the modulation of the voice in stress, volume, pitch, rate, inflection. Good plain expression is what the teacher should seek to secure, without aiming at elocutionary effects.

Spelling.—About fifteen pages, or review. Teach abbreviations and their uses.

Writing.—Review.

Arithmetic.—Review the year's work, giving special attention to subjects least understood.

Grammar.—Continue work in reader, reviewing subjects in grammar as pupils show need of review.

Geography.—Review, including map of United States, map of Arizona, and county map.

Physiology.—Special senses. The eye and its parts. How image is formed on retina. Office of optic nerve. Short sight and long sight, how caused; kind of lenses for correction. Care of eyes. Hearing. External and internal ear. Care of ears. Touch: use of; where most sensitive. Smell: use of; structure of nose. Taste: use of; organs of.

Organs of voice and their functions. Vocal cords. How voice is produced; how modulated. Pitch of voice. Speech.

History.—Government after the war. Articles of confederation. Executive business; how transacted. Congress under the confederation. Shay's rebellion.

Slavery. Free schools. Religion.

The constitution. Why necessary. Leading men of the constitutional convention. Opposing views. Leading men for and against ratification. Political parties. First presidential election.

Study the constitution of the United States from outline prepared by teacher. Commit the preamble to memory. Encourage pupils to read biography as one of the very best methods of studying history.

TESTS FOR PROMOTION.

Reading.—See close of fourth year this grade.

Spelling.—See close of fourth year this grade.

Writing.—See close of fourth year this grade.

Arithmetic.—Ability to define all terms used and to show their application; to solve problems involving principles taught, without reference to text-book; to tell how solutions were performed, and to give reasons for all steps taken.

Grammar.—Pupils should be able to select from ordinary prose and poetry all the clauses and phrases, to tell what they modify, and to parse as wholes; to parse all the words in the same; to have a good understanding of the principles of etymology, and to write compositions on subjects suitable for pupils of this age.

Geography.—A fair comprehension of the principal facts of mathematical and physical geography, and a good understanding of the physical and political geography of North and South America, and of the different divisions of each; a more minute and detailed knowledge of the United States, of the Territory of Arizona, and of the county in which pupils live. Ability to use maps to advantage, and a fair knowledge of map drawing.

Physiology.—See close of fourth year this grade.

History.—Ability to name the leading English, French, and Spanish explorers; what they discovered; territorial claims of each nation by right of discovery; to give most important events in the early settlement of each of the thirteen states; how the colonies were oppressed by the mother country, and how they won their independence; leading American patriots; a general knowledge of the three divisions of constitutional government.

Grammar Grade.

FOURTH YEAR.

WHAT PUPILS SHOULD HAVE.

Fifth reader, spelling book, academic dictionary, arithmetic, mental arithmetic, grammar, geography, physiology, history, copy-book, pen, ink, pencil, sponge, ruler, practice paper, drawing book No. 8.

WHAT TO TEACH.

Reading.—Fifth reader, with supplementary reading. One recitation daily.

Spelling.—Spelling book, and difficult words from class exercises.

Writing.—Copy-book and practice paper.

Arithmetic.—Finish text-book, and review.

Grammar.—Finish text-book, and review.

Geography.—Finish text-book, and review.

Physiology.—Finish text-book, and review.

History.—Finish text-book, and review.

Elements of Civil Government.—Follow suggestions under each month.

Drawing.—Finish book No. 8.

FIRST MONTH.

Reading.—Recite with third year class.

Spelling.—Recite with third year class.

Writing.—Follow suggestions for third year.

Arithmetic.—Involution, square and cube root. Learn the rules carefully. Solve many problems not found in text-book.

Grammar.—Review the verb. Use of sit, set, lie, lay, shall, will, can, may. Prepare lists of sentences and have pupils fill blanks, using in each at least one of the above words correctly, as, "We often ——— there and read."

Geography.—Eurasia. Map study.

Physiology.—Recite with third year class. It will be observed that this is review work for the fourth year class.

History.—Washington's administration. Organization of national government. Seat of government. Vice-president, how chosen. Cabinet, how many members. Hamilton's financial policy. Jay's treaty. Indian troubles. Minister Genet. Whisky insurrection. New states admitted. Washington's farewell address.

John Adams. President and vice-president of different political parties; explain. Alien and sedition laws. Trouble with France. Napoleon Bonaparte. Death of Washington. Washington city made capital.

Jefferson. Elected by house of representatives. Why? Louisiana purchase. Trouble with the Barbary States. Northwest Territory. Steamboat invented. Duel and treason. Embargo act.

Civil Government.—The family. School and school district. Civil district.

SECOND MONTH.

Reading.—Recite with third year class.

Spelling.—Recite with third year class.

Writing.—Follow suggestions for third year.

Arithmetic.—Arithmetical and geometrical progression. Show that when any three of the quantities considered in the progressions are given the other two may be determined. Make many problems in which any three are given, and require pupils to find the other two. Demand proof, using written series.

Grammar.—Syntax. The sentence. Essential elements of the sentence. Simple modifying elements; what they may be. Attendant elements. Give thorough drill on words as elements of the sentence, making daily use of reader.

Geography.—Europe. Follow outline for North America.

Physiology.—Recite with third year class.

History.—Madison's administration. War of 1812. Causes. Campaigns. Burning of Washington. "The Star-Spangled Banner." Tecumseh. Battle of New Orleans. Treaty of peace. Results of the war.

Monroe. Missouri compromise. Purchase of Florida. Mason and Dixon's line. Monroe doctrine. Seminole war. Lafayette's visit. Henry Clay.

John Quincy Adams. How elected, and why. Protective tariff. Death of Thomas Jefferson and John Adams, July 4th. Internal improvements.

Jackson. Black Hawk war. Seminole war. Indian Territory. Tariff and Nullification. National bank. Veto power. Trouble with France. Webster and Calhoun.

Van Buren. Sub-treasury bill. Financial panic of 1837. Slavery. Abolitionists. Queen Victoria.

Civil Government.—The state to executive department.

THIRD MONTH.

Reading.—Recite with third year class.

Spelling.—Recite with third year class.

Writing.—Follow suggestions for third year class.

Arithmetic.—Measurements of surfaces. Master definitions and terms. Find areas of squares, rectangles, rhomboids, triangles, circles, etc. Find length of lines, such as base, perpendicular, hypotenuse, circumference, diameter, radius, etc. Learn the rules.

Grammar.—Compound and complex sentences. Words, phrases and clauses, as subjects, predicates, objects, appositives. Analyze in reader.

Geography.—Europe. Study northern countries. Map drawing. Follow suggestions for North America.

Physiology.—Recite with third year class.

History.—Harrison. Death of president. Inauguration of Tyler. National bank. Webster-Ashburton treaty. Resignation of cabinet. Annexation of Texas.

Polk. Mexican war. Causes. Results. Wilmot Proviso. Discovery of gold. "Fifty-four, forty, or fight."

Taylor. Death of president. Fillmore inaugurated. Omnibus bill. Fugitive slave law. Underground railroads. Free soil party.

Pierce. Gadsden purchase. Kansas-Nebraska bill. "Squatter Sovereignty." Border ruffians. Stephen A. Douglas. John Brown.

Buchanan. Dred Scott decision. John Brown's raid. Acts of secession. Star of the West. The Lincoln and Douglas campaign. Election of Lincoln.

Civil Government.—Executive department. Judicial department. Form of government.

FOURTH MONTH.

Reading.—Recite with third year class.

Spelling.—Recite with third year class.

Writing.—Follow directions for third year.

Arithmetic.—Measurements of solids. Master definitions and terms. Find solid contents of parallelepipeds, cylinders, pyramids, cones, spheres, etc. Find areas of surfaces of same. Learn rules.

Grammar.—Analysis of sentences in grammar and reader. Parsing. Continue regular composition work.

Geography.—Europe. Southern countries. Follow suggestions for North America.

Physiology.—Recite with third year class.

History.—Abraham Lincoln's administration. New party in power. Secession of eleven states. Civil war. Causes: slavery; the doctrine of states' rights; political power of North increasing by the admission of new states; John Brown's raid; election of Lincoln; firing upon Fort Sumter. Mistakes of Southern leaders: that the North would not fight; that all the slave states would secede; that help would come to them from the North; that they would receive foreign help.

Frequently review the administrations, requiring pupil to name the principal events of each, and to write a paragraph on any event that may be given him.

Civil Government.—Legislative department. Executive department.

FIFTH MONTH.

Reading.—Recite with third year class.

Spelling.—Recite with third year class.

Writing.—Follow suggestions for third year.

Arithmetic.—Measurements of bins, tanks, and cisterns. Practical problems. Review measurements.

Grammar.—Analysis of sentences in grammar and reader. Parsing. Composition work.

Geography.—Asia. Special attention to India, China, Japan and Siberia. Follow outline for North America, so far as practical.

Physiology.—Recite with third year class.

History.—Lincoln's administration continued. Call for troops. Battle of Bull Run. Blockade of Southern ports. The Trent affair. The Merrimac and Monitor. Forts Henry and Donelson. Battle of Shiloh. New Orleans captured. Efforts to open the Mississippi. The Army of the Potomac. Battle of Fair Oaks. The Seven Days' Battle. Second Bull Run. Antietam. Emancipation proclamation. Reverses at Fredericksburg and Chancellorsville. Thirteenth amendment.

See that pupils have a good acquaintance with all leading characters, civil as well as military, and that they comprehend the objective point in each great battle. Difference between war and murder.

Civil Government.—Judicial department. Government. Justice. Law and liberty.

SIXTH MONTH.

Reading.—Recite with third year class.

Spelling.—Recite with third year class.

Writing.—Follow suggestions for third year.

Arithmetic.—Carpeting, papering, and plastering rooms. Government land survey. Many practical problems.

Grammar.—The infinitive as a verb, as a noun, as an adjective. Subject of the infinitive. Select infinitives from reader and determine their use. Analysis, parsing, and composition.

Geography.—Africa. Special attention to Egypt, the Barbary States, the Sahara, Soudan, southern colonies and states, especially Transvaal. The Congo Free States, and the results of recent explorations. Railroads. Cairo to Cape Town. Questions on maps.

Physiology.—Recite with third year class.

History.—Lincoln's administration continued. The Gettysburg campaign. Fall of Vicksburg. Opening of the Mississippi. Chickamauga. Grant made lieutenant-general. Capture of Atlanta and march to the sea. Battle of the Wilderness. Lee's surrender at Appomattox. Assassination of Lincoln. Andrew Johnson inaugurated. The army disbanded. Cost of the war. Results of the war. Reconstruction. Fourteenth amendment. Freedmen's Bureau. Impeachment of the president. The French in Mexico. Alaska. Atlantic cable. Review the war by campaigns and locate movements on map. Arizona organized.

Civil Government.—Parties and party machinery. Legislation. Revenue and taxation.

SEVENTH MONTH.

Reading.—Recite with third year class.

Spelling.—Recite with third year class.

Writing.—Follow suggestions for third year.

Arithmetic.—Measurements of lumber, stone, brick, and grain. Many practical examples.

NOTE.—See that the boys know how to measure a load of corn, oats, or wood, and can figure the cost of a load of hogs or bunch of cattle at a given price per pound or hundred weight.

Grammar.—Contraction of sentences by ellipsis and abridgement. Give many examples of each, and require pupils to find examples in reader. Analysis, parsing, and composition.

Geography.—Oceanica. Special attention to Australia, New Zealand, Hawaiian Islands and Philippine Islands.

Physiology.—Recite with third year class.

History.—Grant's administration. Alabama claims, and Geneva award. Pacific railway. Indian troubles. Horace Greeley. Fifteenth amendment. Centennial exposition. Electoral commission.

Hayes. Resumption of specie payment. Chinese immigration.

Garfield. Star routes. Assassination. Inauguration of Arthur. Standard time. Yorktown centennial.

Cleveland. Interstate commerce. Free trade. Anarchists.

Harrison. McKinley bill. Reciprocity. Blaine. Columbian exposition.

Cleveland. World's fair. New tariff. Income tax. Silver agitation. Bond issues. Venezuelan difficulty. Utah admitted.

McKinley. Hawaii annexed. Klondike excitement. War with Spain. Results. Arizona in war with Spain. Rebellion in Philippines. (Teacher will always supplement this subject by adding a list of current events of national interest.)

Civil Government.—Review.

EIGHTH MONTH.

Reading.—Recite with third year class.

Spelling.—Recite with third year class.

Writing.—Follow suggestions for third year.

Arithmetic.—Business forms. Teach the form and explain the use of: receipts in full; receipts on account; negotiable notes; bank drafts; bank checks; certificates of deposit; county and city warrants on treasurer; how to endorse a note, a draft, a check; meaning of debit and credit. Review text-book.

Grammar.—Rules of punctuation. Analysis, parsing, composition. Review text-book.

Geography.—Review, selecting subjects upon which pupils are most deficient at the close of this year's work.

Physiology.—Recite with third year class.

History.—Review. Review.

Civil Government.—Organic Act of Arizona, from outline by teacher.

TESTS FOR GRADUATION.

Reading.—Ability to read intelligently, with proper expression, clear enunciation and distinct articulation; to modulate the voice at will; to define words and explain allusions, and to recite from memory selections equal to five pages of reader.

Spelling.—Habitual good spelling in all written work; habit of consulting dictionary on all doubtful points; ability to read the dictionary intelligently; ability to apply the most common rules for spelling; a general knowledge of derivative words as affected by prefixes and suffixes.

Writing.—Ability to write an easy, neat, legible hand, with fair speed; to analyze small letters and capitals, giving spaces in height; to write a letter, correct in form and passable in subject matter.

Arithmetic.—Should be able to define all terms and perform all operations usually found in a common school arithmetic; to give a clear statement of processes and the principles involved; to state rules for performing operations; accuracy and rapidity in combining figures; a knowledge of business forms in common use.

Grammar.—Ability to analyze ordinary sentences and to parse the words, phrases and clauses; to outline and compose an essay, using accurate phraseology and correct form, punctuation and spelling. The pupil's early education and environment may make it difficult for him to use grammatical language in general conversation, but he should be able to detect errors in his own language, as well as in that of others, and to explain why they are errors.

Geography.—A fair comprehension of the principal facts in mathematical and physical geography; a good understanding of the physical and political geography of the countries of the world, and a more minute and detailed knowledge of the United States, Arizona and individual county. Ability to use maps to advantage, and a fair knowledge of and proficiency in map drawing.

Physiology.—Ability to give the general plan and functions of the different systems and organs of the human body; to give so much of the hygiene of each as is necessary for a fairly intelligent care of the body, and for avoidance of errors that impair the functions of the organs; to give the general bad effects of the use of alcoholic drinks and other narcotics.

History.—A general knowledge of the principal events and personages of United States history; why importance is attached to them; a general understanding of federal, territorial, county, and municipal government.

Drawing.—To be able to draw from objects or life the subjects suggested in the drawing books in the course.

Civil Government.—An intelligent understanding of the general principles of our government.

Advanced Course.

Section 81 of the school law reads as follows:

“Instruction must be given in the following branches, viz.: Reading, writing, orthography, arithmetic, geography, grammar, history of the United States, elements of physiology, hygiene, elements of bookkeeping, industrial drawing, *and such other studies as the Territorial Board of Education may prescribe*, but no such other studies can be pursued to the neglect or exclusion of the studies enumerated.”

The Board of Education, under the above authority, prescribes the following additional studies: Algebra, geometry, geology, rhetoric and composition, civil government, physics, literature, general history, and word analysis.

Such additional branches of study are to be pursued in accordance with the following outline:

FIRST YEAR.

Elementary Algebra (4 months).
 Higher Arithmetic (4 months).
 Physical Geography (4 months).
 Geology (4 months).
 Rhetoric, Composition, and Word
 Work (8 months).
 Civil Government (4 months).
 Bookkeeping (4 months).

SECOND YEAR.

Higher Arithmetic (4 months).
 Elements of Geometry (4 months).
 Physics (8 months).
 Literature (8 months).
 General History (8 months).

Courses of Study for High Schools.

Section 7 of an Act of the Eighteenth Legislative Assembly, entitled "An act to provide for the establishment and maintenance of high schools in the Territory of Arizona," approved March 18, 1895, is as follows:

"SEC. 7. The course of study of such high schools shall be prescribed by the High School Board, subject to approval by the Territorial Board of Education, and shall be such as, when completed, shall prepare its students for admission into the Territorial University."

The only high school established and maintained under the provisions of said act is a union high school located at Phoenix, in Maricopa County. As the courses of study prescribed by the board of said high school are such that pupils of the public schools who have completed the work of the fourth year of the grammar grade, as outlined in the preceding course of study, are prepared for admission to any one of the courses, and that students who have completed either the Latin or the English course in said high school are prepared for admission into the Territorial University, the Board of Education has approved said courses of study, and directs that any high school hereafter established shall pursue one or more of such courses.

The following are the established courses:

FRESHMAN YEAR.

FIRST TERM'S WORK.

<i>Latin Course.</i>	<i>English Course.</i>	<i>Business Course.</i>
Higher Arithmetic.	Higher Arithmetic.	Higher Arithmetic.
English Grammar and Composition.	English Grammar and Composition.	English Grammar and Composition.
American History.	American History.	American History.
Latin Lessons.	Thought Analysis and Literature.	Bookkeeping.

SECOND TERM'S WORK.

<i>Latin Course.</i>	<i>English Course.</i>	<i>Business Course.</i>
Higher Arithmetic, 2-5.	Higher Arithmetic, 2-5.	Higher Arithmetic, 2-5.
English Grammar and Composition.	English Grammar and Composition.	English Grammar and Composition.
American History.	American History.	American History.
Latin Lessons.	Thought Analysis and Literature.	Bookkeeping and Commercial Forms.
Elementary Algebra, 3-5.	Elementary Algebra, 3-5.	Elementary Algebra, 3-5.

THIRD TERM'S WORK.

<i>Latin Course.</i>	<i>English Course.</i>	<i>Business Course.</i>
Physiology.	Physiology.	Physiology.
Higher Arithmetic, 2-5.	Higher Arithmetic, 2-5.	Higher Arithmetic, 2-5.
English Grammar and Composition.	English Grammar and Composition.	English Grammar and Composition.
Civil Government and Constitution.	Civil Government and Constitution.	Civil Government and Constitution.
Latin Lessons.	Thought Analysis and Literature.	Bookkeeping and Commercial Correspondence.
Elementary Algebra, 3-5.	Elementary Algebra, 3-5.	Elementary Algebra, 3-5.
	Penmanship.	

N. B.—2-5 indicates that the subject will be studied two days of each week; 3-5, three days of each week.

SOPHOMORE YEAR—HIGH SCHOOL.

FIRST TERM'S WORK.

<i>Latin Course.</i>	<i>English Course.</i>	<i>Junior Business Course.</i>
Algebra.	Algebra.	Algebra.
Rhetoric.	Rhetoric.	Rhetoric.
Physical Geography.	Physical Geography.	Physical Geography.
Cæsar.	Literature.	Commercial Law, 2-5. Correspondence and Typewriting, 3-5.

SECOND TERM'S WORK.

<i>Latin Course.</i>	<i>English Course.</i>	<i>Junior Business Course.</i>
Algebra.	Algebra.	Algebra.
Rhetoric.	Rhetoric.	Rhetoric.
Physical Geography.	Physical Geography.	Physical Geography.
Cæsar.	Literature.	Commercial Law, 2-5. Typewriting and Bookkeeping, 3-5.

THIRD TERM'S WORK.

<i>Latin Course.</i>	<i>English Course.</i>	<i>Junior Business Course.</i>
Algebra.	Algebra.	Algebra.
Political Economy.	Political Economy.	Political Economy.
Cæsar.	Literature.	Commercial Law and Typewriting.
Botany.	Botany.	Botany.

Penmanship.

JUNIOR YEAR—HIGH SCHOOL.

FIRST TERM'S WORK.

<i>Latin Course.</i>	<i>English Course.</i>	<i>Senior Business Course.</i>
Geometry.	Geometry.	Geometry.
Physics.	Physics.	Physics.
General History.	General History.	Business Correspondence and Typewriting.
Cicero.	Literature.	Shorthand.

SECOND TERM'S WORK.

<i>Latin Course.</i>	<i>English Course.</i>	<i>Senior Business Course.</i>
Geometry.	Geometry.	Geometry.
Physics.	Physics.	Physics.
General History.	General History.	Business Correspondence and Typewriting.
Cicero.	Literature.	Shorthand.

THIRD TERM'S WORK.

<i>Latin Course.</i>	<i>English Course.</i>	<i>Senior Business Course.</i>
Geometry.	Geometry.	Bookkeeping.
Physics.	Physics.	Physics.
General History.	General History.	General History.
Cicero.	Literature.	Shorthand and Thesis.

SENIOR YEAR—HIGH SCHOOL.

FIRST TERM'S WORK.

<i>Latin Course.</i>	<i>English Course.</i>
Solid Geometry.	Solid Geometry.
Chemistry.	Chemistry.
*Mental Philosophy.	*Mental Philosophy.
*Laboratory Physiology.	*Laboratory Physiology.
*German.	*German.
*Zoology.	*Zoology.
*Geology or *Literature.	*Geology.
Virgil.	Literature.

SECOND TERM'S WORK.

*Latin Course.**English Course.*

Review Solid Geometry and study Trigonometry.	Review Solid Geometry and study Trigonometry.
Chemistry.	Chemistry.
*Mental Philosophy.	*Mental Philosophy.
*Zoology.	*Zoology.
*Astronomy.	*Astronomy.
*Geology or Literature.	*Geology.
Virgil.	Themes.
*Physiology, Laboratory.	*Physiology, Laboratory.
*German.	*German.

THIRD TERM'S WORK.

*Latin Course.**English Course.*

*Astronomy.	*Astronomy.
*Mental Philosophy.	*Mental Philosophy.
Chemistry.	Chemistry.
Geology.	Geology.
*Pedagogy.	*Pedagogy.
*Literature and Themes.	Literature and Themes.
Virgil and Thesis.	Thesis.
*Trigonometry.	*German.
*German.	Trigonometry.

Studies marked * are elective. No student should carry more than four studies during any one term. When a student has begun any of the elective studies he should continue the line of work throughout the year. Pupils who feel that four studies are more than they desire to study during any one term, may limit the number to three. Such pupils can graduate whenever the 48 credits have been made.