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DEPARTMENT OF EDUCATION

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Programme of Studies

for the

High, Technical and Normal Schools

of

British Columbia

1924-25

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1924.

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PROGRAMME OF STUDIES.

ADMISSION TO HIGH SCHOOL.

To be eligible for admission to a High School in this Province a candidate must hold an Entrance or higher certificate issued by the Department of Education. A pupil holding an Entrance or higher certificate obtained in another Province or country may, with the approval of the Department, be admitted to a High School on probation, and when he has shown that he is able to undertake High School studies successfully may be enrolled as a regular student without further examination.

HIGH SCHOOL.

GRADE IX.

A.—English.

1. READING AND ORTHOEPY.—Oral reading, with special attention to expression and pronunciation. Prescribed text, 20th Century Fifth Reader.

2. WRITING AND SPELLING.—Legibility and precision in writing and accuracy in spelling will be required in manuscript-work of all subjects.

3. ENGLISH LITERATURE.—(*a.*) A careful study of the following selections in the 20th Century Fifth Reader: On My Mother's Picture, Dora, Elegiac Stanzas, To a Brother, In Memoriam, Rosabelle, Crusader and Saracen, Cavalry Charges at Balaklava, The Ride to Aix, King Richard and Saladin, King Richard and Robin Hood, The English Language, The Apology of Socrates, The Death of Socrates, Thanatopsis, The Imitation of Christ, King Robert of Sicily, The Vision of Sir Launfal, Lady Clara Vere de Vere, Ode to Duty, The Tragedies of Birds' Nests, The Birds of Killingworth, The Blackbird, To a Skylark, To the Cuckoo, Ode to a Nightingale, The Song-Sparrow, The Whitethroat, The Canadian Song-Sparrow, The Death of Arthur, The Passing of Arthur, Sir Roger de Coverley, The Country Gentleman, Lord Chesterfield, Daniel O'Connell, The Italian in England, The Lotus-Eaters, Ulysses, Village Characters, The Angler, The Brook, The Sleeping Beauty, The Fairies, Lord Clive, Ode on the Death of Wellington, Canada and Great Britain, Canada and the United States, Canada and the Empire (both), The British Flag, The First Dominion Day, The Canadian Confederacy, A Song of Canada, Canada to Columbia, Canadians on the Nile, Hands all Round, Kin Beyond Sea. (*b.*) Stevenson's Kidnapped (McClelland & Stewart, Toronto). (*c.*) Lorna Doone, World's Classics (Oxford University Press, Toronto).

4. COMPOSITION.—High School English Composition, Western Canada Series (Copp, Clark Co.), Chapters I.–IV., inclusive.

B.—History.

West's World Progress, Canadian Edition, 1924 (Allyn & Bacon), Chapters I.–V., inclusive.

C.—Mathematics.

1. ARITHMETIC.—General review of the simple rules, factors, measures, fractions, square root; compound quantities, metric system of measures, longitude and time, aggregates and averages, percentage and its applications, stocks and shares, bonds, as in the first *ten* chapters of the Dominion High School Arithmetic, Revised Edition (Gage & Co., Ltd., Toronto).

Students who have the older edition should not be required to purchase the revised edition. Price, 90c.

2. ALGEBRA.—The following chapters of Hall & Knight's Elementary Algebra: I.–XII., inclusive; XIII., examples (*a*) and (*b*) only; XIV.; XV.; XVI., omitting exercises on cube root; XVII., examples (*a*), (*b*), (*c*), (*d*) only.

3. GEOMETRY.—Godfrey & Siddons' Elementary Geometry (The Macmillan Co. of Canada, Ltd., Toronto). Price, $1.50.

Experimental Geometry.—Exercises 1–68; 85–104; 122–138; 152–182; 293–318, inclusive.

Theoretical Geometry.—Theorems 1–14, inclusive. Construction: Construction of a triangle given the three sides; construction of an angle equal to a given angle; bisection of a given angle; bisection of a given straight line; construction of perpendicular to a given straight line from a given point inside or outside the line.

NOTE.—In dealing with Experimental Geometry, teachers are not expected to make an attempt to do all the exercises with their classes, but should make such selections from the given lists as may be necessary to give their students a sound knowledge of elementary geometrical ideas.

D.—Classics.

Students who elect the science option outlined in F must take one language; all other students must take two languages.

1. LATIN.—Robertson & Carruthers' Latin Lessons for Beginners, Lessons I.–XL., inclusive.

2. FRENCH.—Siepmann's Primary French Course, Part I. (Macmillan); *or* The New Fraser and Squair Elementary French Grammar (Copp, Clark Co.); *or* any of the text-books recommended on page 35.

REQUIREMENTS.—*See* pages 21 to 26.

E.—Drawing and Design.

OBJECT DRAWING.—Object or group of objects treated in outline, outline plus simple shadow and full light and shade on white or tinted papers—in pencil, pen and ink, crayon or water-colour. Application of object drawing to posters and other commercial work.

NATURE DRAWING.—Nature forms in outline of pen or pencil or pencil finished in flat colour tones.

DESIGN.—Problems in space filling of geometrical areas and as applied to posters, boxes, book-covers, etc., using nature forms as motifs. Colour harmony.

LETTERING.—Roman alphabet, capitals and small letters. Lettering of verse, prose, poster, and cards.

(See Teachers' Manual in Drawing and Design (Department of Education).)

F.—Science (Optional).

Students may substitute General Science for one foreign language.

GENERAL SCIENCE.—Caldwell & Eikenberry, Revised Edition. Any twenty chapters selected at the discretion of the teacher. Pupils should also supply themselves with the accompanying Laboratory Problems in General Science by Caldwell, Eikenberry & Pieper, and should perform the suggested experiments and keep careful notes.

Books of reference:

The Science of Everyday Life—Van Buskirk and Smith (Copp, Clark Co., Ltd., Toronto).

Everyday Science with Projects—Snyder (Allyn and Bacon).

General Science—Bowden (Oxford University Press, Toronto).

GRADE X.

A.—English.

1. Reading and Orthoepy.—Oral reading, with special attention to expression and pronunciation. Prescribed texts, as in English Literature.

2. Writing and Spelling.—As in Grade IX.

3. English Literature.—Longer Narrative Poems—Jeffries (Macmillan Co. of Canada, Ltd.); and *two* of the following: (*a*) Specimens of the Short Story—Nettleton (Henry Holt & Co.); (*b*) Scott, Quentin Durward (Thomas Nelson & Sons, Ltd., Toronto); (*c*) Shakespeare, Julius Caesar—Stevenson (Copp, Clark Co., Ltd.).

4. Composition.—High School English Composition, Western Canada Series (Copp, Clark Co., Ltd.), Chapters I.–VIII., inclusive. The examination on this subject, besides testing the pupil's knowledge of the prescribed text, will consist of an essay on one of four specified subjects, three of which will be from the English Literature prescribed for the year. Frequent and systematic practice in essay-writing throughout the year is imperative. The value attached to the examination paper will be apportioned by giving 25 per cent. to the questions on the work of the prescribed text and 75 per cent. to the essay.

B.—History.

West's World Progress, Canadian Edition, 1924 (Allyn & Bacon), Chapters VI.–XII., inclusive.

C.—Mathematics.

1. Arithmetic.—Dominion High School Arithmetic, Revised Edition (omitting Appendix B), *or* similar work in the older edition.

Students who have the older book should not be required to purchase the revised edition.

2. Algebra.—The following chapters of Hall & Knight's Elementary Algebra: I.–XV., inclusive; XVI., omitting cube root; XVII.–XXII., inclusive; XXIII., examples (*a*) and (*b*) only; XXIV.

3. Geometry.—Godfrey and Siddons' Elementary Geometry.

Experimental Geometry.—Complete Part I.

Theoretical Geometry.—Books I. and II.

Teachers are not expected to make an attempt to do all the exercises given in the text-book with their classes, but should make such selections as may be necessary to give the students a sound knowledge of geometrical ideas.

D.—Classics.

Students must take two foreign languages and one of the science options outlined in E or *one* foreign language and *two* of the science subjects. Students who elect the science option in the first year should continue the language already chosen.

1. Latin.—Robertson & Carruthers' Latin Lessons for Beginners, pages 1–324 (omitting the B exercises, both Latin and English, in Lessons XL.–LXXX., inclusive, and omitting also Reading Lessons VIII.–XV., inclusive), together with the following Supplementary Reading Lessons: Caesar's First Campaign in Gaul: (*a*) The Helvetian War, (*b*) The War with Ariovistus; and The Story of Ulysses; also the Appendix.

Note.—With the view of securing uniformity of pronunciation, it is recommended that the Roman pronunciation be used.

2. French.—Slepmann's Primary French Course, Part I.; *or* The New Fraser and Squair Elementary French Grammar; *or* any of the text-books recommended on pages 35 and 36.

Requirements.—Page 21 (Conversational Forms and Class-room Phrases) and pages 26 to 31.

E.—Science.

Students who elect two languages must take *one* of the following science subjects: Agriculture, Botany, Chemistry, Physics. Those taking one language must take *two* of the following: Agriculture, Botany, Chemistry, Physics.

1. AGRICULTURE.

Soil Study.—Origin, formation, and classification; physical analysis; necessity and value of drainage; levels and grades.

Plant and Seed Studies.—Field and laboratory studies in weeds (autumn); collection and mounting of specimens; identification of noxious-weed seeds; protective legislation.

Vegetable Gardening.—Choice and classification of garden varieties; preparation and management of hot-beds and cold-frames; garden practice.

Poultry.—Breeds, housing, feeding, and management; incubation and brooding; common pests, diseases, and treatment.

Live Stock.—History and study of types of cattle, horses, sheep, and swine.

Insect Study.—Identification and life-history of field, garden, and orchard insects; remedial measures.

Bee-keeping.—Relationships and life-history of the honey-bee; swarming; winter care; equipment.

Fruit-growing.—Selection of varieties; methods of propagation; pruning.

2. BOTANY.—In this course the nature-study method of presentation should be adhered to throughout. No text-book is prescribed for use of pupils. Each pupil should have a good note-book in which to record his or her observations and conclusions. Careful drawings of parts studied should be emphasized.

Emphasis is placed upon comprehension of principles rather than mastery of detail, and upon observation rather than book knowledge.

The following points should be studied, as far as possible, from plants belonging to families given below:—

Growth.—Germination, buds, growth movements in response to gravitation, light, water, contact (tendrils and the sensitive plant).

Nutrition.—Form and function of roots, stems, and leaves; their relation to each other and to the absorption and conduction of raw materials, and especially in regard to food manufacture. Modifications for storage of food—Tuberous roots, corms, bulbs, etc.

Reproduction.—(*a.*) Vegetative methods—suckers, runners, stolons, tubers, etc. (*b.*) Flowers—bracts, inflorescence, parts of flower, number of whorls, function of each, number and position of parts in each whorl, cohesion and adhesion of parts or whorls. Relation of structure to pollination and to classification of plants into families. To ensure completeness and accuracy of observation the construction of floral diagrams and floral formulæ of flowers examined is recommended. Fruits—modification for seed-dispersal. Seeds—modification for dispersal.

Classification of Plants.—Spermatophytes: (*a.*) Gymnosperms—(Conifers); study of leaves, cones, and general habit of two conifers. (*b.*) Angiosperms—familiarity with the local flora, particularly examples of the following families: (Monocotyledons)—Liliaceæ. (Dicotyledons)—Ranunculaceæ, Cruciferæ, Rosaceæ, Leguminosæ, Scrophulariaceæ, Compositæ. At least twenty-five plants should be studied and a collection should be made.

Plant Associations.—It is recommended that visits be made to different habitats to give pupils an opportunity of studying the flora and its relation to environment, differences of temperature, amount of available water, light, intensity, nature of soil, etc.

Economic Plants of British Columbia.—Weeds, medicinal and poisonous plants, especially those belonging to the above families.

Reference books recommended:

Practical Botany—Bergen and Caldwell (Ginn & Co.).

Beginners' Botany—L. H. Bailey (Macmillian, 1919).

A Guide to the Poisonous Plants & Weed Seeds of Canada and the Northern United States—Thompson and Sifton (University of Toronto Press, 1922).
Plant Relations—Coulter (Appleton, New York, 1905).
Flora of British Columbia—Henry (W. J. Gage & Co.).

3. CHEMISTRY.—A Text-book for High Schools—Cornish (The Macmillan Co. of Canada, Ltd.): Chapters I.–IV., inclusive; Chapter VI., sections 56, 57, 61, and 62; Chapter VII., the substance of sections 67, 68, and 69; Chapter VIII., section 71, the last paragraph of section 73, and section 76 to page 115; Chapter IX., sections 77, 78, 81, 82, 84, 85, and 89; Chapter X., sections 91 and 92; Chapters XI. and XII., omitting questions requiring numerical calculation.

The exercises in the Laboratory Manual in Chemistry (Cornish & Smith) covering the above work should be performed.

4. PHYSICS.—Merchant & Chant's High School Physics, Revised Edition, and Laboratory Manual in Physics, old edition (The Copp, Clark Co., Ltd., Toronto).

Measurement.—Chapter I.

Mechanics of Solids.—Chapters VII. (omitting sections 60 and 61), VIII., and IX.

Mechanics of Fluids.—Chapters X., XI., XII., XIII. (omitting sections 105 and 106), and XIV. (omitting sections 114, 115, 118, 122, 123, 127, and 132).

Heat.—Chapters XXII., XXIII., XXIV., XXVI., and XXX.

Light.—Chapters XXXI. (omitting section 320) and XXXIII. (omitting sections 329, 334, 335, and 336).

Electricity and Magnetism.—Chapters XXXIX. (omitting section 413), XL. (omitting sections 433, 438, and 439), and XLI. (omitting section 443).

The following exercises in The Laboratory Manual must be performed by the pupils themselves: Numbers 1, 3, 5, 7, 10, 12, 15, 16, 22, 23, 24, 27, 30, 32, 47 (the freezing-point; the boiling-point), 54, 67, 92, 93, and 94. The pupils are expected to keep a note-book which may be asked for at any time.

Students who have the older edition of Merchant & Chant should not be required to purchase the revised edition.

Following is a general list of apparatus required for experiments in physics in this grade:—

3 feet rubber tubing (¼-inch).
1 lb. glass tubing (7 mm.).
6 triangular files (5-inch).
2 glass model pumps.
Barometer (mercury or aneroid).
½ lb. pins.
1 pair pliers.
Horseshoe magnet with keeper.
1 dozen test-tubes.
1 dozen glass stirring-rods (10 inches by ¼ inch).
Hammer.
Nails.
Screws.
Gasolene.
Denatured alcohol for alcohol-lamps.

NOTE.—Cost, including barometer (aneroid), approximately $15; cost, including barometer (mercury), approximately $44.

Apparatus required for students working individually or in groups of two, three, or four (in large classes this list should be provided for each group of four students):—

Metre yard-stick.
Vernier slide calliper.
Balance (with 10-gram rider).
Set of weights, 10 grams to 1,000 grams.
1-oz. weight; 1-lb. weight.

Quart measure.
Glass graduate (250 c.c.).
Copper beaker (500 c.c.).
1-inch balls, aluminium or cast iron, lignum vitæ, and maple.
Cylinders, aluminium, brass, copper, iron.
Lever support.
Spring balance (metric and English).
3 single-sheaf pulleys.
Pulley for inclined plane.
Hall's carriage for inclined plane.
Overflow vessel.
Specific-gravity bottle (100 c.c. unadjusted).
3-way glass tube.
2 glass tumblers.
Alcohol-lamp (4-oz.).
Thermometer Centigrade (—10° to 100°).
Steam-generator.
1 lb. copper wire or copper shot.
Plane mirror.
1 pair bar-magnets (6-inch).
25-mm. compass.
¼ lb. iron filings.
Package darning-needles.
Soft-iron rod.
Friction rod vulcanite.
Pith-ball with silk cord.

NOTE.—Approximate cost, $40.

GRADE XI. (JUNIOR MATRICULATION).

The subjects for Junior Matriculation are as follows:—

1. ENGLISH.
2. HISTORY AND HISTORICAL GEOGRAPHY.
3. MATHEMATICS (Algebra and Geometry).
4. FRENCH, or GERMAN, or LATIN.
5. (*a.*) The *two* languages in 4 not already taken.

Or

(*b.*) *One* of the languages in 4 not already taken and *one* of the following Sciences: Chemistry, Physics, Botany, Agriculture.

Or

(*c.*) *Two* of the following sciences: Chemistry, Physics, Botany, Agriculture.

NOTE.—Greek may be taken in place of one science, but only by students offering Latin.

English.

REQUIREMENTS IN EACH SUBJECT.

1. COMPOSITION AND READING.—The principles of English composition, as in High School English Composition, Western Canada Series (Copp, Clark Co., Ltd.), with short essays on a general subject and other subjects based on works prescribed for reading, as follows: (*a.*) Prose (two books to be selected)—Washington Irving, The Sketch Book (Macmillan, Oxford); Scott, Kenilworth; George Eliot, Silas Marner (ed. Stevenson, Copp, Clark; or Macmillan or Dent); Southey, Life of Nelson (Everyman's Library). (*b.*) Poetry (one to be selected)—Shakespeare, As You Like It (ed. Stevenson, Copp, Clark; or Macmillan); Tennyson, Gareth and Lynette (Macmillan or Ginn).

The editions are merely recommended, not required.

The books to be selected should be read carefully, but the student's attention should not be so fixed upon details that he fails to appreciate the main purpose and beauty of the work.

Frequent practice in composition is essential.

2. LITERATURE (FOR CRITICAL STUDY).—Shakespeare, Merchant of Venice (ed. Stevenson, Copp, Clark) *or* Macbeth (Junior School ed., Blackie & Sons); the work of *any five* of the poets treated in Poems of the Romantic Revival (Copp, Clark Co.).

Candidates will be expected to memorize some of the finest passages.

Two examination papers of two hours each—one on Composition, the other on Literature.

Spelling will be tested by the candidate's papers in English. Examiners in other subjects will also take note of misspelled words and will report flagrant cases to the Board.

History and Historical Geography.

The essentials of world history as presented in West's World Progress (Allyn & Bacon), Canadian Edition, 1924, prepared by Professor Mack Eastman, of The University of British Columbia. This text may be obtained also in two volumes entitled respectively "A Short History of Early Peoples" and "A Short History of Modern Peoples." Teachers should emphasize and develop the sections treating of British and British Empire History. For 1924–25 Wrong's "History of England" and "History of Canada" will be required for supplementary reading.

It is recommended that candidates make a special study of the following list of topics for the school-year 1924–25:—

1. WEST.—(*a.*) The Reformation upon the Continent. (*b.*) England and the Protestant Movement. (*c.*) Puritanism and Politics in England. (*d.*) Age of Louis XIV. (*e.*) The French Revolution (five chapters). (*f.*) England and the Industrial Revolution. (*g.*) The Revolution in the Lives of the Workers. (*h.*) Britain, 1815–1914. (*i.*) The British Empire of To-day. (*j.*) The French Republic. (*k.*) The German Empire. (*l.*) Russia.

Students should read the chapter on "The World War," and Canada's part in it (as well as the two preceding chapters), for their own information.

The chapter on "Europe Since the War" may be used as a background for the study of current events.

2. SUPPLEMENTARY READING.—(*a.*) Wrong's High School History of England, especially the chapters on "The Elizabethan Age," "The Revolution" (of 1688), "Society in England in the Eighteenth Century," and "The British Empire."

(*b.*) Wrong's History of Canada, especially the last five chapters, which treat of Confederation, the Winning of the West, the early history of British Columbia, Sir John A. Macdonald, Sir Wilfrid Laurier, and the Canada of To-day.

The geography required will be that relating to the history prescribed.

One paper of two hours.

Mathematics.

1. ALGEBRA.—As in the first thirty-two chapters and the graphical work of Articles 411–428, inclusive, Hall & Knight's Elementary Algebra, omitting the whole of Chapter 29 and omitting also articles and examples on variation in Chapter 32. Questions may be assigned which will test the candidate's accuracy in the elementary processes of arithmetic, vulgar and decimal fractions, and square root.

One paper of two hours.

2. GEOMETRY.

A. Constructions.—Use of such simple instruments as graduated ruler, compasses, set-squares, and protractor, etc., in the accurate construction of figures; some leading propositions reached by induction as a result of these constructions.

To bisect a given angle, a given straight line.

To draw a perpendicular to a given straight line from a given point (*a*) in the line, (*b*) not in the line.

Locus of a point equidistant from two given lines.

To construct a triangle with sides of given length.

To construct an angle equal to a given angle.

Through a given point to draw a straight line parallel to a given straight line.

To divide a line into any number of equal parts.

To describe a parallelogram equal to a given triangle and having one of its angles equal to a given angle.

To draw a triangle equal in area to a given quadrilateral.

To describe a parallelogram equal to a given rectilineal figure, and having an angle equal to a given angle.

The plotting of points on squared paper.

The areas of rectilineal figures on squared paper.

To find the centre of a given circle.

To circumscribe a circle about a given triangle.

To draw a tangent to a given circle from a given point on or without the circle.

On a given straight line to construct a segment containing an angle equal to a given angle.

In a given circle to inscribe a triangle equiangular to a given triangle.

To inscribe a circle in a given triangle.

To draw an escribed circle of a given triangle.

About a given circle to circumscribe a triangle equiangular to a given triangle.

To find the fourth proportional to three given straight lines.

To divide a given straight line internally and externally in a given ratio.

To find the mean proportional between two given straight lines.

Exercises on the preceding.

B. Theorems.—Definitions.

If two triangles have two sides and the contained angle of one respectively equal to two sides and the contained angle of the other, the two triangles are congruent.

The angles at the base of an isosceles triangle are equal, with converse.

If two triangles have the three sides of one respectively equal to the three sides of the other, the triangles are congruent.

Relations between angles formed by a transversal cutting two parallel lines, with converse.

The exterior angle, made by producing one side of triangle, equals the sum of the two interior and opposite angles; and the sum of the three interior angles is two right angles.

The greater side of a triangle has the greater angle opposite it, with converse.

If two triangles have two angles and a side of one respectively equal to two angles and the corresponding side of the other, the triangles are congruent.

If two triangles have two sides of one respectively equal to two sides of the other and have the angles opposite one pair of equal sides equal to each other, the angles opposite the other pair of equal sides are either equal or supplementary.

Any two sides of a triangle are together greater than the third side.

If two triangles have two sides of the one respectively equal to two sides of the other, but the contained angle in one greater than the contained angle in the other, the triangle which has the greater contained angle has the greater third side, with converse.

Straight lines which join the ends of two equal and parallel straight lines towards the same parts are themselves equal and parallel.

In any parallelogram the opposite sides and angles are equal, the diagonal bisects the area and the diagonals bisect each other.

Parallelograms on the same or equal bases and between the same parallels are equal in area.

Triangles on the same or equal bases and between the same parallels are equal in area.

If two equal triangles are on the same side of a common base, the straight line joining their vertices is parallel to the common base.

The complements of the parallelograms about the diagonal of any parallelogram are equal to each other.

Algebraic and geometric proofs of areas of squares and rectangles in connection with the segments of a straight line.

The square described on the hypotenuse of a right-angled triangle is equal to the sum of the squares on the other two sides, with converse.

In an obtuse-angled triangle the square on the side opposite the obtuse angle equals the sum of the squares on the other two sides increased by twice the rectangle contained by either of these sides and the projection on it of the other.

In any triangle the square on the side opposite the acute angle is equal to the sum of the squares on the other two sides diminished by twice the rectangle contained by either of these sides and the projection on it of the other.

If from a point within a circle more than two equal straight lines are drawn to the circumference, that point is the centre.

Equal chords of a circle are equidistant from the centre, with converse.

Of two chords in a circle the one which is nearer to the centre is greater than the one which is more remote from the centre, with converse.

The angle at the centre of a circle is double the angle at the circumference on the same arc.

The angles in the same segment of a circle are equal, with converse.

The angle in a semi-circle is a right angle, in a major segment is acute, and in a minor segment, obtuse.

The opposite angles of any quadrilateral inscribed in a circle are supplementary, with converse.

The radius drawn to the point of contact of a tangent is perpendicular to the tangent; the perpendicular to the tangent at the point of contact passes through the centre; the perpendicular from the centre on the tangent passes through the point of contact.

If two circles touch one another, the centres and the point of contact are in one straight line.

The angles made by a tangent to a circle with a chord drawn from the point of contact are respectively equal to the angles in the alternate segments of the circle.

Triangles of the same altitude are to one another as their bases.

A straight line drawn parallel to the base of a triangle cuts the sides, or the sides produced, proportionally, with converse.

If the vertical angle of a triangle is bisected internally or externally, the bisector divides the base into segments which have the same ratio as the other sides of the triangle, with converse.

If two triangles are equiangular, their corresponding sides are proportional, with converse.

If two triangles have one angle of the one equal to one angle of the other, and the sides about the equal angles proportional, the triangles are similar.

If two triangles have two sides of one proportional to two sides of the other, and the angles opposite one pair of corresponding sides in the proportion equal, the angles opposite the other pair of corresponding sides are either equal or supplementary.

If two chords intersect within a circle, the rectangle contained by the segments of one is equal to the rectangle contained by the segments of the other.

If from a point without a circle a secant and a tangent be drawn, the square on the tangent is equal to the rectangle contained by the secant and the part of it without the circle.

The areas of similar triangles are proportional to the squares on corresponding sides.

NOTE.—Constructions and theorems on ratio and proportion are restricted to cases in which the ratios are commensurable.

At the examination, questions may be given in making the actual constructions in the prescribed course. Candidates will therefore provide themselves with a graduated ruler, compasses, set-square, and protractor.

Exercises on the preceding.

One paper of two hours.

Texts: Godfrey and Siddons' Geometry or Hall and Stevens' School Geometry.

Chemistry.

As in Chemistry—Cornish, A Text-book for High Schools (Macmillan), and Cornish and Smith, A Laboratory Manual in Chemistry (Macmillan).

One paper of two hours.

Physics.

The general principles of physics as given in any standard text-book of High School Physics. The examination will be based on the Ontario High School Physics (Merchant & Chant), old edition, and The Ontario High School Laboratory Manual in Physics.

Measurement—Chapter I.

Hydrostatics—Chapters X., XI., XII., XIII., and XIV.

Sound—Chapters XVIII., XIX. (omitting sections 198 and 199), and Chapter XX. to the end of section 206.

Heat—Chapters XXIV., XXV., XXVI., XXVII., XXVIII., XXIX., and XXXI.

Light—Chapters XXXII., XXXIII., XXXV., XXXVI., XXXVII., and XXXVIII.

Magnetism and Electricity—Chapters XLI., XLII., XLIII., XLIV., XLV., XLVI., XLVII., and XLVIII. (omitting section 529).

Exercises as in the Laboratory Manual (omitting numbers 6, 33, 34, 36, 37, 39, 51, 52, 58, 69, 77, 78, 83, 96, 97, 99, and 107).

Botany.

In this course the nature-study method of presentation should be adhered to throughout. No text-book is prescribed for use of pupils. Each pupil should have a good note-book in which to record his or her observations and conclusions. Careful drawings of parts studied should be emphasized.

Emphasis is placed upon comprehension of principles rather than mastery of detail, and upon observation rather than book knowledge.

The following points should be studied, as far as possible, from plants belonging to families given below:—

1. Growth.—Germination, growth regions, buds, meristem, cambium, growth movements in response to gravitation, light, water, contact (tendrils, and the sensitive plant).

2. Nutrition.—Form, structure, and function of roots, stems, and leaves; their relation to each other and to the absorption and conduction of raw materials, and especially in regard to food manufacture. Simple experiments to illustrate osmosis, photosynthesis, and transpiration. Modifications for storage of food—tuberous roots, corms, bulbs, etc.

3. Reproduction.—(*a.*) Vegetative methods—suckers, runners, stolons, tubers, etc. (*b.*) Flowers—bracts, inflorescence, parts of flower, number of whorls, function of each, number and position of parts in each whorl, cohesion and adhesion of parts or whorls. Relation of structure to pollination and to classification of plants into families. To ensure completeness and accuracy of observation, the construction of floral diagrams and floral formulæ of flowers examined is recommended. Fruits—origin of parts, structure, texture, modifications for seed-dispersal. Seeds—origin, structure, embryo, nature and position of food store. Modifications for dispersal.

4. Classification of Plants based on the increasing complexity of plant structure, development, reproduction, and life-histories. Essential characteristics of the four divisions: (1.) Thallophytes—characteristics of subdivisions Algæ, Fungi, Lichens. (2.) Bryophytes—life history of Moss. (3.) Pteridophytes—life-history of Fern; characteristics of Horsetails and Club-moss. (4.) Spermatophytes: (*a.*) Gymnosperms—(Conifers); study of leaves, cones, and general habit of at least three genera. (*b.*) Angiosperms—familiarity with the local flora, particularly examples of the following families: (Monocotyledons)—Gramineæ and Liliaceæ. (Dicotyledons)—Salicaceæ, Ranunculaceæ, Cruciferæ, Rosaceæ, Leguminosæ, Umbelliferæ, Ericaceæ, Scrophulariaceæ, Lablatæ, Compositæ.

5. Plant Associations.—It is recommended that visits be made to different habitats, to give pupils an opportunity of studying the flora and its relation to environment, differences of temperature, amount of available water, light intensity, nature of soil, etc.

6. Economic Plants of British Columbia.—Weeds, medicinal and poisonous plants, especially those belonging to the above families.

On application teachers will be provided with a supplementary outline of the prescribed work.

Teachers' reference books:

Bergen & Caldwell: Practical Botany (Ginn & Co.).

E. N. Transeau: Science of Plant Life (World Book Co., 1919).

Coulter, Barnes & Cowles: Text Book of Botany, Vols. I. and II. (University of Chicago Press).

Ganong: A Text Book of Botany (Macmillan, 1916).

Curtis: Nature and Development of Plants (H. Holt, 1915).

Henry: Flora of Southern British Columbia (Gage, 1915).

R. B. Thompson and H. B. Sifton: Poisonous Plants and Weed Seeds of Canada (University of Toronto Press, 1922).

One paper of two hours.

Agriculture.

SOIL STUDIES.—Origin and classification; water, air, and bacteria in soil; drainage; drainage surveys; physical analysis; composition; plant-foods; humus and fertilizers.

SOIL MANAGEMENT.—Tillage, manuring and rotation of crops; humid and dry farming.

VEGETABLE GARDENING.—Hot-beds and cold-frames; their preparation and use; selection of garden seeds; choice of varieties; cultural methods.

SMALL FRUITS.—Soil and cultural requirements; standard varieties; harvesting and marketing.

LANDSCAPE GARDENING.—Plans for beautifying home and school grounds; making and care of lawns, walks, and flower-beds; best adapted ornamental trees, shrubs, and flowering plants.

ORCHARDING.—Location, planting, and management; harvesting and marketing; standard varieties.

INSECT STUDY.—Identification and life-history of field, garden, and orchard insects; remedial measures.

FIELD CROPS.—Selection, cultivation, harvesting, and disposition.

LIVE STOCK.—Necessity of live stock in good farming; history, adaptability, and management of the principal classes.

POULTRY.—Breeds, housing, feeding, and management.

RURAL ECONOMICS.—Agricultural organizations and co-operative associations.

BEE-KEEPING.—Life-history, care, and management; equipment; recognition and treatment of diseases.

One paper of two hours.

NOTE.—Fifty per cent. of the possible total in the final examination will be awarded on the written paper and 50 per cent. on term-work, including certified laboratory note-books.

Latin.

TEXTS.—Caesar, Book IV., Chapter 20 to the end; Caesar, Book V., Chapters 1 to 23, inclusive; Virgil, Aeneid II., Lines 1–505.

GRAMMAR.—Knowledge of grammar will be tested by translation and composition, and by questions based on the specified texts.

TRANSLATION AT SIGHT FROM LATIN TO ENGLISH.

COMPOSITION.—Translation into Latin of detached English sentences and easy narrative based on the prescribed texts, as in Henderson and Little's Matriculation Caesar (Copp, Clark Co.).

Two papers of two hours each—one on Composition and Grammar, the other on prescribed texts and translation at sight.

NOTE.—The Roman method of pronouncing Latin is recommended.

Greek.

Lessons 1–48 of White's First Greek Book (Ginn & Co.).

One paper of two hours.

NOTE.—This course can be covered successfully in one year.

French.

See page 21 (Conversational Forms and Class-room Phrases), page 30 (Letter Forms), and pages 31 to 35.

Two papers of two hours each.

German.

READING AND SPEAKING.—Candidates will be expected to have a fair knowledge of German sounds and pronunciation. They must be able to read with ease German prose or verse of ordinary difficulty and to answer correctly in German simple questions based on the reading prescribed.

GRAMMAR.—They will be expected to have a thorough *practical* knowledge of German accidence and of such points of syntax as are of frequent occurrence in ordinary prose style. This knowledge will be tested by asking them to modify sentences given, to fill in words necessary to complete sentences, or to change uninflected words to forms required by context, etc.

TRANSLATION AT SIGHT INTO ENGLISH of a German passage of moderate difficulty, dealing with German life, ways, and customs. A knowledge of useful words will be required.

TRANSLATION INTO GERMAN of detached English sentences and of an easy English passage. A knowledge of simple idiomatic and colloquial German expressions will be required.

Books recommended: (*a*) Zinnecker: Deutsch fur Anfänger, Exercises 1–32 (Heath); (*b*) Haertel: German Reader for Beginners (Ginn & Co.).

N.B.—Teachers should insist upon correct pronunciation and use the language as much as possible in class instruction.

Two papers of two hours each.

GRADE XI. (NORMAL ENTRANCE).

Students of Grade XI. who wish to enter Normal School in September, 1925, must meet the Junior Matriculation requirements in English, History, Mathematics, one foreign language, and one Science, and must also take the following course in the subject of Geography:—

Geography.

Canadian School Geography, with B.C. Supplement—Cornish (Dent & Sons, Ltd.), and Canadian School Atlas—Cornish (Dent & Sons, Ltd.).

One paper of two hours.

Candidates who have Junior Matriculation standing may qualify for admission to Normal School by writing a paper in Geography.

Candidates who meet the Senior Matriculation requirements will be admitted to Normal School without further examination.

GRADE XII. (SENIOR MATRICULATION).

Candidates must furnish evidence of having passed Junior Matriculation, or its equivalent.

Candidates who have been granted Junior Matriculation standing with supplementals will be permitted to sit for the Senior Matriculation Examinations, but will not be granted full Senior Matriculation standing until they have completed both Junior and Senior Matriculation.

The subjects for Senior Matriculation are as follows:—

1. English.
2. Mathematics.
3, 4, 5. Three of the following, including at least one science and one language: History, Chemistry, Physics, Biology, French, German, Greek, Latin.

Requirements in each Subject.

English.

Literature.—Elementary study of a number of literary forms to be chosen from the short story, the play, the novel, the essay, the simpler sorts of poetry.

Texts for 1924–25: Canby, A Study of the Short Story (Holt); Euripides, Electra, in Gilbert Murray's paraphrase; Shakespeare, Julius Caesar; Sheridan, The School for Scandal (Everyman); Ibsen, The Doll's House (Everyman); An Anthology of Modern Verse (Methuen).

Composition.—Elementary forms and principles of composition; expository themes; study of models.

History.

Modern British and European history from the Protestant Reformation to the close of the World War. A higher standard will be required than for Junior Matriculation. Text-book: West's World Progress (Canadian Edition), from Part VIII. to the end. This portion of the text-book is also published separately as "A Short History of Modern Peoples." Teachers should assign supplementary reading. This course is for the year 1924–25 only. Topics to be studied during 1924–25: (1) The Continental Reformation; (2) The Reformation in England and Scotland; (3) Puritanism and Politics in Britain; (4) The Age of Louis XIV.; (5) The French Revolution and Napoleon; (6) The Industrial Revolution in England; (7) The Revolution of 1848 in France; (8) The Unification of Italy and of Germany; (9) Political and Social Reform in England 1815–1924; (10) The British Empire of To-day; (11) The French Republic; (12) The German Empire; (13) Russia; (14) Some of the Causes and Results of the World War, as well as the Principal Features of the Struggle Itself.

Mathematics.

Algebra.—Equations, progressions, ratio, proportion, variation, surds, theory of equations, inequalities, maxima and minima, permutations, combinations, binomial theorem.

Text: Crawford's Senior High School Algebra (Macmillan) (omitting Chapters X., XIV., XV., XVI.), or the same subject-matter in similar text-books.

Geometry.

A. Synthetic Geometry.—Loci, maxima and minima, the system of inscribed, escribed, and circumscribed circles with metrical relations, the pedal or orthocentric triangle, Simpson's line, the nine-point circle.

To divide a given straight line internally and externally in medial section.

To describe a square that shall be equal to a given rectilineal figure.

To describe an isosceles triangle having each of the angles at the base double the third angle.

To inscribe a regular pentagon in a given circle.

The sum of the squares on two sides of a triangle are together equal to twice the square on half the third side plus twice the square on the median to that side.

The perpendicular from the right angle to the hypotenuse in a right-angled triangle divides the triangle into two triangles which are similar to each other and to the original triangle.

To find the mean proportional between two given straight lines.

To describe a polygon similar to a given polygon and with the corresponding sides in a given ratio.

To divide similar polygons into similar triangles.

The areas of similar polygons are proportional to the squares on corresponding sides.

To make a polygon similar to a given polygon and such that their areas are in a given ratio.

In a right-angled triangle any rectilineal figure described on the hypotenuse is equal to the sum of the two similar and similarly described figures on the other two sides.

If the vertical angle of a triangle be bisected by a straight line which also cuts the base, the rectangle contained by the sides of the triangle is equal to the rectangle contained by the segments of the base together with the square on the straight line which bisects the angle.

If from the vertical angle of a triangle a straight line be drawn perpendicular to the base, the rectangle contained by the sides of the triangle is equal to the rectangle contained by the perpendicular and the diameter of the circle described about the triangle.

The rectangle contained by the diagonals of a quadrilateral inscribed in a circle is equal to the sum of the two rectangles contained by its opposite sides.

Two similar polygons may be so placed that the lines adjoining corresponding points are concurrent.

If a straight line meets the sides BC, CA, AB of a triangle ABC in D, E, F, respectively, then BD.CE.AF = DC.EA.FB, and conversely (Menelaus' Theorem).

If straight lines through the angular points ABC of a triangle are concurrent and intersect the opposite sides in D,E,F, respectively, then BD.CE.AF = DC.EA.FB, and conversely (Ceva's Theorem).

Exercises on the preceding.

B. Analytical Geometry.—Rectangular co-ordinates, distance between two points, the co-ordinates of the point dividing the line joining two given points in a given ratio, the area of a triangle.

Plotting equations of the forms, $ax+by+c=o$, $ax^2+by^2=c$, $ax^2=by+c$, $by^2=ax+c$.

Equations of the straight line in the forms $x/a+y/b=1$ (intercept form), $y=mx+b$ (slope form), $y-y_1=m(x-x_1)$ (general slope form), $x \cos \alpha + y \sin \alpha = p$ (normal form), $(y-y_1)/(y_1-y_2)=(x-x_1)/(x_1-x_2)$ (two point form). The interpretation of the different constants in these equations.

The angle between two straight lines, condition of parallelism, condition of perpendicularity.

The length of the perpendicular from a given point to a given straight line.

The equation of a line passing through the intersection of two straight lines.

The equation of the circle with centre at origin and with centre at (h, k). Finding the radius and the co-ordinates of the centre from the general equation $x^2+y^2+2gx+2fy+c=o$. The equation of a circle passing through three points.

The tangent to the circle with centre at the origin in the forms $xx_1+yy_1=r$, and $y=mx+r\sqrt{1+m^2}$.

The normal in the form $x/x_1=y/y_1$.

Exercises on the preceding.

Text: McDougall's Advanced Geometry for High Schools (Copp, Clark Co.).

One examination paper.

TRIGONOMETRY.—Playne & Fawdry's Practical Trigonometry (Copp, Clark Co.), Chapters I. to IX., inclusive, or the same subject-matter in similar text-books. Wentworth & Hill's Five-Place Tables (Ginn & Co.).

Chemistry.

GENERAL CHEMISTRY.—This course is arranged to give a full exposition of the general principles involved in modern Chemistry, and comprises a systematic study of the properties of the more important metallic and non-metallic elements and their compounds, and the application of Chemistry in technology.

Students must reach the required standard in both theoretical and practical work, and are required to submit a certified laboratory note-book.

Book recommended: Alexander Smith, General Chemistry for Colleges (Century Co.). Chapter XXXIX. may be omitted.

Physics.

A general study of the principles of mechanics, properties of matter, heat, light, sound, and electricity. The course has two objects: (1) To give the minimum acquaintance with physical science requisite for a liberal education to those whose studies will be mainly literary; (2) to be introductory to the courses in Agriculture, Chemistry, Engineering, and Physics. Students must reach the required standard in both theoretical and practical work and are required to submit a certified laboratory note-book.

Text-books: Ontario High School Physics and Ontario High School Laboratory Manual in Physics.

Biology.

The fundamental principles of Biology; the interrelationships of plants and animals; life processes; the cell and division of labour; life-histories; relation to environment.

Text-book: W. M. Smallwood, Text-book of Biology (Lea & Febiger, 1920).

Latin.

TEXTS.—W. J. Woodhouse: Cicero, Pro Lege Manilia (Copp, Clark Co.). Page: Virgil, Aeneid IV., Georgic IV. (Macmillan).

COMPOSITION.—Bradley: Arnold's Latin Prose Composition (Longmans & Co.), Exercises I.–XVIII.

HISTORY.—Boak: A History of Rome to 565 A.D. (Macmillan), Chapters 1–13.

Two papers of three hours each.

Greek.

TEXTS.—Bond & Walpole: Lucian, Extracts (Macmillan). Blakeney: Euripides, Alcestis (Bell's Illustrated Classics).

COMPOSITION AND GRAMMAR.—White's First Greek Book (Copp, Clark Co.).

HISTORY.—Cox: Athenian Empire (Longmans' Epoch Series).

French.

(*a.*) LITERATURE.—Molière: Le Bourgeois Gentilhomme. Bazin: Six Contes (Oxford Press). Allen & Schoell: French Life (Henry Holt).

(*b.*) LANGUAGE.—Revision of the essentials of French Grammar applied to the correct writing of French. Oral work from Weil: Leçons de Français (Delagrave).

German.

LANGUAGE.—Completion and Revision of Zinnecker: Deutsch fur Anfänger (Heath).

COMPOSITION based on texts read.

READING.—Moser: Der Bibliothekar (Ginn). Freytag: Die Journalisten (Ginn). Hiene: Die Harzreise (Allyn and Bacon).

REQUIREMENTS IN FRENCH FOR GRADES IX., X., AND XI.

INTRODUCTION.

This Course in French is merely for the guidance of teachers and is to be used in conjunction with any of the text-books mentioned on pages 35 and 36. It is not intended to replace the text-book.

A high standard of accuracy in written French will be required, and the Matriculation Examination will be based on the essential principles of French, but not on any particular book. Facility in translating into English will not be emphasized and a minimum amount of time should be devoted to this exercise in school. Oral work should be stressed from the beginning of the course, as oral tests will soon become part of the examination.

No special editions of some of the books suggested have been recommended. Most of them are published by several firms in Canada, Great Britain, and the United States. Teachers should consult the catalogues and make their own choice.

The use of wall-pictures is strongly recommended even if the particular book on which they are based is not in use. A subscription to an illustrated weekly such as *L'Illustration* would be a good investment for any school. *L'Illustration* is of high literary and artistic merit and is one of the best illustrated periodicals.

CONVERSATIONAL FORMS AND CLASS-ROOM PHRASES.

The following "class-room orders" should be introduced little by little during the three years and should be kept in use:—

Bonjour, *Monsieur, Madame, Mademoiselle. Comment allez-vous ce matin? Avez-vous bien dormi? Entrez! (polite form: Entrez, je vous prie). Asseyez-vous! (polite form: Prenez la peine de vous asseoir). Retirez votre manteau. (Voulez-vous retirer votre manteau?) S'il vous plaît. Merci. (At table *Merci* means *No thank you.*)

The person has not seized something said and wishes it to be repeated: Plaît-il? (Vous disiez? Que dites-vous?) When passing in front of people, the equivalent of "Excuse me" is the French word "Pardon." Je vous demande pardon. To apologize is *Faire des excuses.* (Je vous fais toutes mes excuses.)

In class: Ouvrez vos livres. Fermez vos livres. Allez au tableau noir. Ecrivez. Effacez ce mot (cette phrase, cette lettre). Essuyez le tableau noir. Reprenez votre place. Venez ici. Levez-vous. Quittez la salle (Retirez-vous). Soyez à l'heure. N'oubliez pas votre devoir pour demain. Ecrivez lisiblement. Apportez-moi votre livre. Donnez-moi votre livre. Montrez-moi votre livre.

Tea-time: Vous allez prendre du thé? L'aimez-vous fort (ou léger)? Sucrez-vous votre thé? Un peu de crême? ou de citron? Voici des gâteaux. Servez-vous, je vous en prie. Faites-moi le plaisir de reprendre un peu de gâteau. Merci, j'en ai suffisamment (*not* "J'en ai assez").

Grade IX.

1. Verbs.

(*a.*) Present indicative of any regular verb (interrogative, negative).

(*b.*) Same tense of common irregular verbs, such as: mettre, prendre, tenir, avoir, être, voir, dire, aller, venir, pouvoir, faire, ouvrir, écrire.

(*c.*) And of common reflexive verbs, such as: s'appeler, se lever, s'asseoir, s'arrêter, se coucher.

(*d.*) Imperative of most of above verbs (2nd plural only).

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* Monsieur, Madame, or Mademoiselle should be added to all questions and answers in oral work. It is impolite to omit such titles.

(*e.*) Ordinary verbs in use in this grade:—

(1.) 1st conjugation—tourner, se tourner, montrer, toucher, fermer, lever, baisser, indiquer, regarder, donner, marcher, avancer, reculer, monter, commencer, porter, nommer, manger, aimer, préférer, casser, déchirer, allumer, compter, verser, jeter, parler, chanter, écouter, rester, patiner, tirer, pousser, ramasser, changer, respirer.

(2.) 2nd conjugation—finir.

(3.) 4th conjugation—descendre, entendre.

2. Pronouns.

(*a.*) Personal pronouns in nominative case and after prepositions.

(*b.*) Certain ordinary indefinite pronouns, such as: on, tout, le monde, quelqu'un.

3. Adjectives.

(*a.*) Demonstrative and possessive adjectives.

(*b.*) Common adjectives of physical quality, such as: grand, petit, long, court, rond, carré, épais, mince, lourd, léger, blanc, noir, gris, brun, vert, jaune, rouge, bleu, dur, mou, froid, chaud, bon, mauvais, pointu, plat, assis, jeune, vieux, fort, pareil, différent, même, joli, beau.

(*c.*) Cardinal and ordinal numerals up to 100.

(*d.*) Certain adjectives of indefinite quantity, such as: tout, plusieurs, chaque.

(*e.*) A few adjectives of nationality, such as: canadien, anglais, français, américain, japonais, chinois.

(*f.*) Agreement of adjectives.

(*g.*) Comparison of regular adjectives.

4. Adverbs.

(*a.*) Of time—quand, maintenant, tout de suite, aussitôt, bientôt, de bonne heure, tard, en retard, toujours, quelquefois, souvent, puis, alors, enfin, longtemps, aujourd'hui, en général, avant.

(*b.*) Of place—où, loin, dehors, dedans, partout, ici, là, autour de.

(*c.*) Of quantity—beaucoup, très, trop, peu, aussi, assez, combien.

(*d.*) Of manner—comment, vite, lentement, fort, doucement, ensemble, debout.

5. Prepositions.

À, à côté de, au dessus de, au dessous de, avec, contre, chez,* dans, de, devant, derrière, en, entre, par, pour, pendant, près de, sur, sans, sous, vers.

6. The pupil should be conversant with the following forms of expression:—

Voici; Voilà.

Comment vous appelez-vous? Je m'appelle Smith.

Où demeurez-vous? Je demeure à Vancouver.
Je demeure rue Nelson, No. 201.
Je demeure dans la rue Granville.
Je demeure dans la Colombie Britannique.

Quel âge avez-vous? J'ai douze ans.

Je suis plus (moins) âgé que Paul.

Il est plus (moins) jeune que moi.

Ces deux garçons sont du même âge.

Quel costume portez-vous? Je porte un veston, un jersey, etc.

En quoi sont vos habits? En laine, en coton, en soie, etc.

Nous sommes canadiens (canadiennes).

Nous habitons le Canada.

Tout le monde n'est pas canadien. Il y a des Anglais, des Français, etc. Les Anglais demeurent en Angleterre; les Français en France; les Américains,

* Attention should be drawn to the fact that *chez* is used with persons, not with places; i.e., *chez l'épicier* (not *chez l'épicerie*).

aux Etats-Unis ou dans l'Amérique du sud; les Japonais au Japon; les Chinois en Chine, etc.

Quel temps fait-il? Il fait beau (mauvais).
Il fait froid (chaud), etc.
Il neige; il pleut.

De quelle couleur est mon crayon? Il est rouge.
En quoi est-il? Il est en bois.
Ces crayons sont de même couleur, de même forme, de même taille.
Ces crayons sont de différentes couleurs, de différentes formes, de différentes tailles.
Ils ne sont pas pareils.
Comment est ce crayon? Il est rouge, rond et long.
Mon crayon est plus (moins) long (court) que votre crayon.
Mon crayon est aussi long que votre crayon.
Mon crayon n'est pas si long que votre crayon.
Voici le plus long des crayons.
Qu'est-ce que c'est? C'est un chat.
Quels sont ces animaux? Ce sont des chats.
Voyez-vous autre chose dans l'image?
Combien de garçons y a-t-il dans la classe?
Il y a dix garçons.
Combien avez-vous de doigts?
Quelle heure est-il? Il est une heure, deux heures, etc.
Il est trois heures et demie; et quart; moins le quart.
Il est cinq heures cinq, dix, vingt, etc.
Il est cinq heures moins cinq, dix, vingt, etc.
Quel jour du mois est-ce? C'est aujourd'hui le vingt et un décembre. C'est le premier janvier. C'est le vingt et un du mois. Nous sommes au printemps; en été.
Nous sommes à la fin de l'automne; au commencement de l'hiver.
Je me touche la tête, les pieds, etc.
Je me lève, je m'assieds, je m'arrête.
J'étends, les bras à droite, à gauche, en avant, de côté, au dessus de la tête.
Je suis debout, assis, couché, à genoux.
On va à pied, à cheval, à bicyclette, en voiture, en bateau, en chemin de fer, en tramway, en automobile.
Je ne peux pas lever mon pupitre. Pourquoi?
Parce qu'il est trop lourd.
Parce que je ne suis pas assez fort.
Voici le garçon le plus fort de la classe.
Il n'est pas assez fort pour lever mon pupitre.
Je ne puis entendre si vous ne pariez pas assez fort.
Pourquoi avons-nous des yeux?
Nous avons des yeux pour voir.
Il joue à la balle, au football, au hockey.
Les oreilles sont des deux côtés de la tête.
Je tiens mon crayon à la main.
Henri reste à sa place.
Ces fraises ne sont pas bonnes à manger.
En juin elles changent de couleur.
Elles deviennent rouges.

NOTE.—Words in vocabularies not to be learned in list but by practice.

un homme	1. la fille
la femme	2. Madame
le garçon	2. Monsieur

2. Mademoiselle
le père
la mère
le fils
la fille (daughter)
le frère
la soeur
le cousin
la cousine
un enfant
3. le parent
le mari
la femme
lundi
mardi
mercredi
jeudi
vendredi
samedi
dimanche
le jour
la semaine
le mois
aujourd'hui
4. le congé
les vacances (f.)
une école
la leçon
la dictée
la salle
un escalier
le corridor
le pupitre
le banc
5. le tableau (noir)
le mur
le plancher
le plafond
la porte
la fenêtre
le vestiaire
6. la sonnette
la table
7. la chaise
le fauteuil
la craie
une éponge
le crayon
le porte-plume
la gomme
8. le livre
le cahier
le papier
la feuille de papier
l'encre (f.)
un encrier
le (papier) buvard
l'enveloppe (f.)
le calendrier
9. une horloge
la pendule
les ciseaux (m.)
le couteau
le canif
la clef
la serrure
fermer à clef
la lumière électrique
les marches (f.)
le rez-de-chaussée
le premier étage
le trottoir
la chaussée
la poche
10. le porte-monnaie
l'argent (m.)
le mouchoir
une épingle
une aiguille
le fil
la ficelle
l'air (m.)
la lumière
le soleil
la lune
la nuit
le matin
l'après-midi
les nuages
la pluie
la neige
la grêle
le brouillard
le ciel
la terre
l'eau (f.)
il pleut
il neige
il fait du vent
il fait du brouillard
il gèle
le froid
la chaleur
la glace
la boue
une averse
11. un orage
la tempête
le temps
le printemps
en été
en automne

en hiver
humide
sec
mouillé
la mouche
une abeille
le miel
le papillon
la grenouille
la souris
le rat
le chien
le chat
le cheval
la vache
le mouton
la poule
le poulet
la dinde
l'oeuf (m.)
les oeufs
la tête
le pied
les bottines (f.)
les patins (m.)
le chapeau
la casquette
le bras
la voix
la jambe
le corps
le nez
la bouche
l'oreille (f.)
la main
les yeux (m.)
le doigt
la rue
l'avenue (f.)
la maison
la salle à manger
la cuisine
le gaz
une allumette
le salon
une romance (a drawing-room song)

12. la chambre (à coucher)

13. le bureau
l'ascenseur (m.)
le tramway
l'hôtel de ville
le bureau de poste
le théâtre
le palais de glace (indoor ice skating rink)
le parc

14. l'agent de police
(le sergent de ville)
le facteur (postman)
le jardin
la pomme
la poire
la fleur
la rose
la feuille
un arbre
une assiette
le plat
le verre
la nappe

15. le tapis

16. la serviette
la fourchette
la cuiller
la tasse
la théière
la cafetière
le pain
la viande
le beurre
les légumes (m.)
le poisson
la soupe
le café
le thé
le lait
les confitures (f.)
le gâteau
la tarte
le dîner
le déjeuner
le petit déjeuner
la bouteille
le lit
l'oreiller (m.)
le drap
la couverture de laine (blanket)
la serviette (de toilette)
le savon
le peigne
la brosse à cheveux
la brosse à dents
la brosse à habits
la brosse à ongles

1. *Fille* should not be used except when the context shows clearly that it means *girls* as distinguished from *boys* (e.g., Les filles et les garçons jouent dans le jardin). In all other cases the French translation of *girl* is *jeune fille*.

2. All answers to questions, etc., should be followed by Madame, Monsieur, or Mademoiselle (e.g., Etes-vous bien dans ce fauteuil? Oui, Monsieur. Bonjour, Monsieur. Comment allez-vous, Mademoiselle?)

3. NOTE.—*un parent* frequently means *a relative*.

4. *Congé* is a short holiday. *Vacances*, a longer one.

5. A word in brackets may be omitted when the context makes the sense clear. If there is any doubt, the bracketed word should be added; e.g., Ecrivez ce mot au tableau—evidently the *black-board*. Il y a deux tableaux dans la salle—one would assume the meaning to be pictures. If this is not the desired meaning, say "Il y a deux tableaux noirs dans la salle."

6. There are several words for "bell" in French, each referring to a particular shape—*cloche, timbre, grelot*. *Sonnette* is generally used for "electric bell."

7. The distinction between *chaise* and *fauteuil* is always carefully made in French. Our use of "chair" for "arm-chair" should not be imitated by using *chaise* for *fauteuil*.

8. *Livre* should always be distinguished from *cahier* (a book in which one writes).

9. The usual distinction: *horloge*, a public clock (inside), *pendule*, a clock inside a building, is not accurate. The true distinction is one of size and shape. A clock standing on the floor—a case clock or "grandfather's clock" is *une horloge* as is the big public clock. Wall clocks, clocks that stand on mantels and on tables, inside, are *pendules*. The alarm clock is *un réveille-matin* or simply *un réveil*. The masculine word *un pendule* (a pendulum) should not be taught in spite of the grammar-books, first, because it causes confusion; second, because it is never needed. The pendulum of a clock is called *un balancier*.

10. *La bourse* is the bag-shaped purse, and as this is no longer used there is no need to learn the word at this stage—*porte-monnaie* is the current word.

11. Careful distinction should be made between *orage* (thunder-storm) and *tempête* (wind-storm). *Orage* should not be carelessly used for *storm*.

12. *Chambre* is not generally used for *room*. A house with eight rooms is *Une maison de huit pièces*. *Chambre* used without qualifying word means *bed-room*.

13. While the word *office* is frequently seen in the French press nowadays, meaning a room in which business is transacted, it has, in literary French, a totally different meaning (pantry) and its use in the journalistic sense should be avoided.

14. Avoid the use of *gendarme* in this sense. The gendarme does police work outside the large towns, but he is a soldier—much like the former R.N.W.M.P. It is absurd to refer to a Paris policeman as a *gendarme*.

15. There are two meanings of tapis—(1) the coloured table-cloth not used at meal-times; (2) the carpet.

16. This is another case of context deciding the meaning. In the bath-room the *serviette* is a *towel;* in the dining-room a *napkin*. If a distinction must be made, use *serviette de toilette, serviette de table, serviette de bain*.

Grade X.

1. Verbs.

(*a*. Indicative and imperative of the four conjugations completed.

(*b*.) Present, future, past indefinite and imperfect of the common irregular verbs, such as: aller, apprendre, s'asseoir, avoir, boire, connaître, couvrir, dire, dormir, écrire, envoyer, être, faire, lire, mettre, ouvrir, partir, pleuvoir, pouvoir, prendre, savoir, servir, sortir, tenir, venir, voir, vouloir.

(*c*.) Ordinary verbs used in this grade (in addition to those of Grade IX.) are: acheter, adresser, ajouter, apporter, arriver, attacher, brosser, cacher, causer, chercher, déjeuner, demander, demeurer, dîner, emporter, enseigner, entrer, essuyer, laver, mouiller, nager, neiger, ôter, passer, penser, plier, protéger, quitter, remplacer, rencontrer, ressembler, sécher, sonner, souper, travailler, traverser, trouver, vider, visiter, s'amuser, se baigner, se dépêcher, s'endormir, se promener, s'habiller.

2nd conjugation—fournir, remplir, vieillir.
3rd conjugation—devoir, recevoir.
4th conjugation—attendre, perdre, rendre, répondre, vendre.

2. Pronouns (only in their simplest uses).

(*a.*) Weak personal pronouns in dative and accusative; use of y and en; position of these pronouns.

(*b.*) Emphatic (strong) personal pronouns: (1) after prepositions; (2) standing alone; (3) after *que* (comparative); (4) after c'est; (5) in compound subjects.

(*c.*) Relative pronouns: qui, que, lequel, laquelle lesquels, etc., and their elementary uses.

(*d.*) Interrogative pronouns and their ordinary uses: qui? qu'est-ce qui? que? quoi? lequel? etc.

(*e.*) Demonstrative pronouns: *ce* (as subject of être), celui, celle, ceux, celles (celui qui travaille, celui de Jean, etc.).

(*f.*) Indefinite pronouns: ne . . . personne; ne . . . rien; tout, chacun.

3. Adjectives.

(*a.*) Numerals.

(*b.*) Comparison of bon, mauvais, petit.

(*c.*) Ordinary adjectives in use in this grade: large, étroit; absent, présent; nécessaire; facile, difficile; gros; domestique, sauvage; haut; bas; laid; vilain, profond; doux, sur; agréable, désagréable; propre, sale; intéressant, amusant; favori; fatigué; cher, bon marché; frais; content; célèbre; malade; catholique, protestant, juif, irlandais, écossais, chrétien.

4. Adverbs.

Ordinary adverbs in use: de bonne heure, tard; partout; de temps en temps; rapidement; longtemps; ainsi; tout à fait; presque; bien, mal, mieux; autrement; par coeur; en haut, en bas; tout de suite; d'habitude, d'ordinaire; le lendemain; à la hâte; en même temps; dessus, dessous; surtout; encore; seulement, non seulement; de nouveau; à présent; peut-être; à la fois; ne . . . point, ne . . . plus, ne . . . jamais, en retard.

5. Prepositions.

Au bout de, au milieu de, en face de, depuis, malgré, pendant, parmi, sauf, jusqu'à, au lieu de.

6. Conjunctions.

Après que, aussitôt (dès) que, comme, lorsque, car, parce que, pendant que, quand, si.

7. The pupil should know expressions similar to the following:—

—Je vais à l'école; à l'église; en ville; à la campagne.

—Je coupe ma pomme en deux; en quatre; en petits morceaux. Je la trouve à mon goût.

—On ne peut couper la pomme sans couteau. On ne peut apprendre une langue sans beaucoup travailler.

—L'entrée des élèves n'est pas sur le devant de cette école; elle est de l'autre côté. Notre classe est en bas; en haut; au rez de chaussée; au premier étage.

—Ma maison est tout près de l'école. Je sors de l'école. Pour aller chez moi, je tourne à gauche. Cette rue passe devant (près de) l'école. J'entre dans la maison.

—En quittant la maison je dis "Au revoir" à ma mère. En venant à l'école je vois beaucoup de monde. Je donne la main à mon ami; je lui dis "Bonjour." Nous nous mettons au travail. C'est la leçon d'arithmétique.

J'apprends à parler français; mon professeur m'enseigne à écrire le latin. J'ai beaucoup à faire. Je me sers d'un crayon pour écrire. Pour écrire il faut un crayon. Notre salle de classe a 30 pieds de long sur 20 de large. Elle contient plus (moins) de 40 élèves. Il y a assez de place pour tout le monde.

— Le temps; il va pleuvoir; il pleut à verse.

— J'ai caché mon mouchoir; cherchez-le; cherchez partout.

— Je pense à mon ami. Je lui envoie une lettre par la poste. Je la jette dans la boîte aux lettres. Mon ami répond à ma lettre. Il pense à moi. Il ressemble à son père.

— Il est ici depuis huit jours. Il a été malade plusieurs jours de suite; à présent il va mieux. Je l'ai visité il y a trois mois (il y a longtemps.)

— Mon ami m'invite à faire une promenade sur l'eau avec lui. Je suis content de faire cela. Son canot automobile fait 12 kilomètres à l'heure. La rivière passe à quelques mètres de notre maison. Ce bateau à voiles est à moi; le bateau à rames est à mon frère.

— Ma tante entre la première. Elle regarde l'heure à la pendule. La pendule marque midi cinq. Elle jette un coup d'oeil à sa montre. Les enfants entrent en courant. Nous entrons les derniers. Nous attendons mon oncle en nous tenant debout. En attendant nous causons. Nous nous mettons à table. Tout le monde commence en même temps. On a faim; on a soif; on a bon appétit. C'est pour cela qu'on dîne de si bonne heure. On mange généralement trois fois par jour. Il y a des gens qui ne mangent que deux fois par jour. Un couteau sert à couper la viande; la fourchette sert à tenir ce qu'on coupe.

— Le soir nous faisons de la musique. Nous aimons beaucoup la musique. Ma tante joue du piano. La musique nous fait beaucoup de plaisir. Tout le monde s'amuse bien. Quelquefois mon oncle lit à haut voix.

— Je me couche très tard. J'ai sommeil. Je dors bien. Je me réveille plus tard que d'habitude. Je ne me lève pas tout de suite. Je fais encore un petit somme. Alors il faut me lever à la hâte. Je fais ma toilette. Je m'habille. J'ai juste le temps de déjeuner. Ma mère fait rôtir (griller) une tranche de pain. Elle la fait rôtir à l'électricité. Avant de boire mon café, je l'ai sucré. D'ordinaire je me lève de bonne heure les jours de fête (congé).

— Je vais passer quelques jours avec mon cousin. Je pars de la gare du Nord. Je monte dans le train. Un train se compose de plusieurs voitures. Je regarde par la fenêtre. Le mécanicien met le train en marche. Nous voici à la campagne. Je descends du train. Voilà mon cousin dans une automobile. Le chauffeur fait marcher l'automobile. J'arrive le soir. Je pars le lendemain.

— Il faut faire cuire quelques oeufs. Savez-vous le faire? Je ne sais pas le faire comme il faut. Marie sait faire cuire des oeufs à la coque.

— J'ai besoin de tant de choses. Le marchand a toutes sortes de choses à vendre. Mes chaussures me font mal. Avant d'acheter des bottines il faut les essayer avec soin. Celles-ci me vont bien. Une bonne paire de bottines coûte assez cher. En avez-vous à meilleur marché.

le lion.	la perdrix
le tigre	le faisan
l'ours (m.)	la morue
le singe	le crabe
la fourrure	le homard
le loup	l'huître (f.)
l'écureuil (m.)	le filet
le cerf	le saumon
le moineau	la truite
le rouge-gorge	le pois
l'hirondelle (f.)	le haricot
l'alouette (f.)	le haricot vert

les épinards
la tomate
l'oignon (m.)
le navet
le panais
la campagne
le blé
l'avoine (f.)
la racine
l'herbe (f.)
la fraise
la framboise
le gazon
le raisin (grapes)
la prune
la cerise
la noix
l'orange (f.)
le citron
la datte
le riz
en friche (uncultivated)
la clairière
le feuillage
la branche
le tronc
l'écorce (f.)
le sapin
le chêne
l'érable (m.)
le pin
la ronce
la fougère (ferns and bracken)
la patrie
l'empire (m.)
le royaume
le roi
la reine
le soldat
l'infanterie (f.)
la cavalerie
l'artillerie (f.)
une musique
le drapeau
le tambour
le clairon
l'avion (m.)
l'uniforme (m.)
une cartouche
le sabre
le fusil
le canon
l'obus (m.)
une batterie
l'ennemi (m.)
une bataille
une victoire
une défaite
le blessé
le prisonnier
une ambulance
une flotte
le cuirassé
le croiseur
le torpilleur
le pavillon (naval flag)
le pirate
une torpille
l'amiral (m.)
le marin
le juge
une loi
le tribunal
l'avocat (m.)
le jury
le jugement
une amende
une prison
le dieu
une religion
le chrétien
le païen
le catholique
le protestant
la Providence
Noël
le Vendredi Saint
le Mardi Gras
les Rameaux
Pâques
la Toussaint
le Nouvel An
le Jour de l'An
la maladie
le médecin
la cicatrice
la douleur
la guérison
le gilet
le pantalon
le pardessus
la cravate
le bas
le drap
le coton
la laine
le mouchoir
le bouton
le soulier
la chaussure
la pantoufle
le châle

la ceinture
le cuir
le robinet
le peigne
la soie
la bague
le crime
le voleur
la bicyclette
le pneumatique
le guidon (handle-bar)
une équipe
la balle
la corde
les mathématiques (f.)
l'arithmétique (f.)
la géométrie
l'algèbre (f.)
la physique
la chimie
la profession
un métier
l'atelier (m.)
le ressort
un outil
l'ouvrier (m.)
le boulanger
le boucher
le marchand de légumes
l'épicier (m.)
le tailleur
le cordonnier
le maçon
le charpentier
le jardinier
le forgeron
le libraire (bookseller)
la librairie (book-shop)
la bibliothèque (library)
le journal
la revue
la nouvelle
l'éditeur (m.) (publisher)
l'imprimeur (m.)
la cuisinière
la couturière
le champ
le paysan
le laboureur
le fermier
les gages (wages) (m.)
les appointements (salary) (m.)
la charrue
la meule
le voyage
le chemin de fer
le train
le wagon
la valise
la malle
la gare
le billet
les bagages (m.)
l'arrivée (f.)
l'entrée (f.)
le départ
la sortie
le taxi
le marché
le magasin (large shop)
la boutique (small shop)
la caisse (cash desk)
un échantillon (sample)

To Friends. **Letter Forms for Grades X. and XI.**

Begin: Cher Jean, Mon cher ami, etc.; and end:—
Je te serre cordialement la main, Jean Durand.
Croyez à ma sincère amitié, Jean Durand.
Agréez l'assurance de ma sincère amitié, Jean Durand.
Recevez les témoignages de l'amitié de Jean Durand.
Recevez mes meilleures amitiés Jean Durand.
Bien à vous.

Formal Letters.

Do not use *cher*. Begin: Monsieur (or Madame or Mademoiselle); and end:—
Agréez, Monsieur, mes salutations distinguées, Jean Durand.
Je vous prie d'agréer, Monsieur, l'expression de ma haute considération, Jean Durand.
Veuillez agréer, Monsieur, l'assurance de mes meilleurs sentiments—(de mes sentiments bien dévoués—l'expression de mes meilleurs sentiments—l'expression de mes sentiments respectueux—l'expression de mes sentiments cordialement dévoués, etc.).

The titles—Monsieur, Madame, Mademoiselle—should be written in full on the envelope, not abbreviated.

Monsieur Charles Dupont,
Chez Monsieur Emile Dupont,
4, rue de Rivoli,
Paris.

Grade XI.

Verbs.

(*a.*) Full conjugation of the irregular verbs of Grade X. and of the following: comprendre, courir, croire, devenir, falloir, se remettre, mourir, offrir, parvenir, plaire, suivre, valoir, vivre, conduire.

(*b.*) Full conjugation of the following regular verbs (in addition to those of Grades IX. and X.):—

1st conjugation—Amener, s'appeler, appuyer, s'arrêter, calmer, consister, corriger, décider, empêcher, emmener, s'ennuyer, gagner, intéresser, laisser, longer, mener, oublier, préparer, regretter, sauver.

2nd conjugation—Saisir.

3rd conjugation—Apercevoir.

4th conjugation—Interrompre.

(*c.*) The following verbal expressions: faire une promenade, faire un voyage, avoir de la chance, s'en aller, faire la connaissance de, aller chercher, venir chercher, avoir lieu, être en train de se demander, être de retour, faire du bien, faire du mal, avoir juste le temps, prendre un rhume, aller bien, aller à bord, avoir raison (tort).

(*d.*) The passive voice.

(*e.*) The use of tenses: In addition to the ordinary uses of each tense, the following special uses:—

1. Present tense with *si* and *depuis*.
2. Imperfect tense with *si* and *depuis*.
3. Past anterior with après que, aussitôt que, quand, lorsque.
4. Future with quand, après que, aussitôt que.
5. Subjunctive with pour que, afin que, bien que, quoique, jusqu'à ce que, avant que, à moins que, de peur que, il faut que, vouloir, dire.
6. Infinitive with other prepositions.
7. Pres. participle with *en*.
8. Perfect infinitive with après, sans.

(*f.*) Verbs followed by an infinitive:—

a. de and infinitive: essayer de, avoir l'intention de, avoir le temps de, avoir la chance de, être heureux (ravi, charmé, surpris, étonné, frappé, fier, capable) de, s'empêcher de, avoir envie de, décider de, se dépêcher de, demander de, dire de, il est facile de.

b. à and infinitive: avoir à, tenir à, passer le temps à, apprendre à, s'attendre à, se mettre à, parvenir à.

c. infinitive without preposition: aller, désirer, devoir, espérer, faire, falloir, pouvoir, savoir, sembler, venir, vouloir.

d. pour and infinitive after assez, trop.

(*g.*) Special attention to the following verbs which have different constructions in English and French:—

s'approcher de, se rendre compte de, se souvenir de, se féliciter de, servir de, se soucier de, profiter de, demander qc. à qn., ressembler à, penser à, s'attendre à, survivre à, succéder à, réussir à, plaire à, s'intéresser à.

Pronouns.

(*a.*) Weak (unemphatic): Incessant drill on form and placing of pronoun objects.

(*b.*) Strong (unemphatic)—as in Grade X.

(*c.*) Possessive pronouns.

(*d.*) Demonstrative pronouns—as in Grade X.

(*e.*) Relative pronouns: qui, que, dont; ce qui, ce que, ce dont, quoi, lequel (lesquels, etc.); referring to things, after *parmi* and *entre*, where ambiguity is possible, where *dont* is impossible; use of *où* as a relative pronoun.

(*f.*) Interrogative pronouns—as in Grade X. Use of *quel* as pronoun.

(*g.*) Indefinite pronouns: on; l'un et l'autre; tout, tous; personne, quelque chose, quelqu'un, rien (followed by *de*).

Adjectives.

Feminine and plural forms and comparisons of the following adjectives in addition to those of Grades IX. and X.: rapide, lent, prêt, nouveau, neuf, ancien, voisin, fréquenté, désert, bruyant, tranquille, agité, animé, aimable, agréable, charmant, charmé, heureux, malheureux, gai, joyeux, triste, élégant, vif, gentil, roux, oisif, paresseux, occupé, raisonnable, varié, courageux, précieux, furieux, magnifique, splendide, imposant, superbe, merveilleux, humble, énorme, immense, royal, principal, profitable, pur, salubre, sûr, clair, obscur, aucun, certain.

Adverbs.

A mon tour, à peine, au contraire, au hasard, certainement, d'ailleurs, de bon coeur, déjà, d'ici là, donc, en détail, en ce moment, en effet, en excursion, en famille, enfin, en flammes, en liberté, en même temps, en plein air, en pleine campagne, en pleine forêt, en avance, en route, entièrement, environ, heureusement, hors de, justement, le plus tôt possible, même, ne . . . ni . . . ni, par centaines, par exemple, par suite, partout, ailleurs, peu à peu, peut-être, plus tôt, plutôt, pour la plupart, profondément, sans doute, seulement, soudain, surtout, tout à l'heure, toutefois, un jour de plus, volontiers.

Prepositions.

En face de, au milieu de, à l'extérieur de, envers, à travers, à bord de, à cause de

Conjunctions.

Afin que, à mesure que, à moins que, avant que, bien que, chaque fois que, de crainte que, de peur que, jusqu'à ce que, pour que, puisque, quoique, tant que, toutes les fois que.

The vocabulary of Grade XI. is based on Siepmann, Primary French Course, Part II., Lessons 3, 4, 6, 7, 8, 9, 10, 11, 15, 16, 17, 18, 19, 21, 22, 23, 24, 25, 26, 29.

Nouns.

la soirée
l'année (f.)
la journée
le siècle
la veille
le pays
l'opéra (m.)
la cathédrale
le musée
la statue
les boulevards (m.)
la capitale
les environs (m.)
le café
la foule
les gens (m.)
le mouvement
l'omnibus (m.)
l'impériale (f.) (the top or outside seats)
le coup d'oeil
le monument (public building)
le quartier
la place (square)
le dôme
le pont
l'arche (f.)
la chapelle
la tour
le restaurant
l'endroit (m.)
le lieu
l'orage (m.)
la tempête
l'abri (m.)
le refuge
l'éclair (m.)

le tonnerre
le coup de tonnerre
la foudre
l'ouragan (m.)
le rhume
le naufrage
la vague
la lame
l'écume (f.)
le naufragé
l'appareil (m.) de sauvetage
le calme
la plage
l'atmosphère (f.)
l'incendie (m.)
le pompier
le fourgon
la flamme
le jet d'eau
l'échelle (f.)
le degré
la chaleur
l'étincelle (f.)
le locataire (tenant)
l'objet précieux (m.)
le paquet
le cri
le vieillard
le sifflet
le coup de sifflet
l'échelle (f.) de sauvetage
le sauveteur
la victime
le héros
le danger
l'événement (m.)
la causerie
le lycée
la classe de philosophie
le jeu
le muscle
le membre
l'exercice (m.) physique
la pelouse
la revue
la fanfare
la musique
l'air (m.) (tune)
le terrain
la tribune
la carte
la troupe
l'armée
l'officier (m.)
le drapeau
l'infanterie (f.)
l'artillerie (f.)
l'uniforme (m.)
le canon
le coup de canon
le cavalier
la charge
les applaudissements (m.)
l'orchestre (m.)
les distractions (f.)
l'hôte (m.)
le théâtre
la représentation
l'acteur (m.)
le drame
l'oeuvre (f.)
le poète
le rideau
la loge
les premières (f.)
les secondes (f.)
le parterre
le fauteuil d'orchestre
la pièce
le vers
l'arrivée (f.)
le séjour
le départ
l'examen (m.)
la question
le succès
l'honneur (m.)
le bachelier
l'occasion (f.)
la distribution
le prix
l'estrade (f.)
l'assistance (f.)
les autorités (f.)
le maire
l'adjoint (m.)
le député
le sénateur
le discours
la voix
la cérémonie
le volume
la joie
le port
le quai
le fleuve
le bord
la rive
le dock
l'entrepôt (m.)
l'usine (f.)
le magasin de gros

le navire
le mât
la voile
le steamer
le commerce
l'embouchure (f.)
l'affluent (m.)
le paysage
le paquebot
l'excursion (f.)
la passerelle
l'île (f.)
le phare
le bateau à vapeur
le coteau
la villa
le château
la vigne
le vignoble
le propriétaire
la fabrication
le breuvage
le vin
la bière
le chocolat
le point de débarquement
la côte
le gardien
l'aide (m.)
la surface
la mouette
le rocher
le signal
le bateau de pêche
le panorama
le sentier
le sable
les vacances (f.)
le voisin
la partie de campagne
le repas champêtre
les provisions (f.)
la bouteille
la réunion
le couvert
le souvenir
la pensée
le conseil
la préférence
la satisfaction
l'impatience (f.)
la beauté
le problème
la chance
l'admiration (f.)
la variété
l'élégance (f.)
l'animation (f.)
le plaisir
l'hospitalité (f.)
le camarade
le compagnon
l'étranger (m.)
la langue
le spectacle
la connaissance
l'anxiété (f.)
le son
le commencement
la scène
le peuple
le palais
le grand personnage
la cour d'honneur
la tour
le signe
la santé
l'extrémité (f.)
les nouvelles (f.)
les curiosités (f.)
les vendanges (f.)
le midi
le feuillage
l'ombre (f.)
la fraîcheur
le sommet
la dune
l'aspect (m.)
le visage
le caractère
la récompense
la rangée
le centre
la lanterne
la vitre
l'idée (f.)

Idiomatic Expressions.

Quel plaisir!
Comme (que) je suis heureux!
J'en suis sûr.
Je ne saurais l'oublier.
Sous Georges premier (cinq).

en 1924.
en janvier; au mois de janvier.
en français.
en moins *de* quatre heures.
d'aujourd'hui en huit (quinze).
un quart d'heure; un jour *de plus*.

Je dois (ai dû, devrai, etc.) y aller.
Je devrais (aurais dû) y aller.
Vous avez dû (me voir).
Le train doit (devait) partir à 8 h.

Que serions-nous devenus?
Il était reçu; il était refusé.
Il y a huit ans que Jean y est élève.
Je crois que non (oui, si).
Cela ne vaut pas la peine.
Il vaut mieux rester ici.
La maison est située *à dix kilomètres*.
La mer est mauvaise (calme).

Text-books.

French Courses.

Siepmann Primary French Course, Pt. I. (Macmillan). Illustrated.
Siepmann Primary French Course, Pt. II. (Macmillan). Illustrated.
Louis Marchand: La Famille Dupont. A First French Book (Oxford Press, 1922). Direct Method. Copiously illustrated with sketches.
Batchelor, F. M. S.: Mon Premier Livre de français; Mon Second Livre de français (Oxford Press). Direct Method.
Camerlynck: France Première année de français (Allyn & Bacon). Direct Method.
Bovée: Première année de français (Ginn).
Rivington's A First Book of Oral Teaching. Illustrated. Four of the illustrations are enlarged for wall pictures. (Rivington, London.) Direct Method.
Curtis & Roberts: Oral Lessons in French, Pts. I. to V. (Renouf, Montreal). Direct Method.
Kirkman: La Première année de français (A day in Paris) (A. & C. Black). May be had with or without vocabulary. There are two coloured wall pictures on linen (7s. 6d. each).
Fraser and Squair: New Elementary French Grammar.

Readers.

Grade IX.

Nivet: Tales for Beginners (Blackie).
Bell & Trevelyan: French à la française, Pt. I. (Arnold, London).
Jules Lazare: Lectures faciles (Hachette & Co.).
Magee and Anceau: Lectures illustrées. (58 illustrations, of which 32 are in colour.) 1s. 8d. (Adam & Charles Black, 4, 5, 6 Soho Square, London.)
Wooley and Bourdin: French Reader for Beginners (D. C. Heath & Co.). Illustrated. This book is suited to small schools as it contains exercises to be written.

Grade X.

Les deux petites patriotes (Hachette & Co.).
Fairy Tales of Master Perrault (Cambridge Press).
Histoire de mes bêtes (Dumas) (Blackie).
Little Plays (Blackie).

Aldrich & Foster: French Reader (Ginn).
Histoires et Jeux (Ginn).
Simple Dramatic Pieces (Latham) (Macmillan).
French à la française, Pts. II. and III. (Arnold, London).
La maison aux Panonceaux (Lady Frazer) (Cambridge Press).
O. T. Robert: Aladin. Simplified text with exercises (Constable, London; Renouf Publishing Co., Montreal).
Simplified French Texts (Methuen, London).

Grade XI. (Junior Matriculation and Normal Entrance).

The following are suggested as interesting and worth reading in class:—
Daudet: Tartarin de Tarascon. (Novel.)
Daudet: Lettres de Mon Moulin. (Short stories.) (Thomas Nelson & Sons, Toronto.)
Daudet: Lettres de Mon Moulin. (Short stories.)
About, E.: Le roi des montagnes. (Novel.)
Bazin: Contes de Bonne Perrette. (Short stories.)
De Maistre: La jeune Sibérienne. (Elementary.)
Labiche et Martin: Le Voyage de M. Perrichon. (Play.) (Thomas Nelson & Sons, Toronto.)
Gauthier: Le Pied de Momie; with exercises (Constable, London; Renouf Publishing Co., Montreal).
The recent annotated texts edited by Wilson Green and published by the Cambridge Press, England. With exercises.

During the three years a few poems or fables should be memorized. The following contain suitable material:—
Choix de poésies faciles (Harrap).
A little book of French Poetry (Blackie).
Petite anthologie des poètes français (Nelson, Toronto).
Les cent meilleurs poèmes lyriques (Gowans & Gray, London).
The Oxford Book of French Verse (Oxford Press).
French Verse for Upper Forms (Spencer) (Cambridge Press).
Henning: Representative French Verse of the Nineteenth Century (Ginn).

Dictionaries.

Petit Larousse Illustré (Larousse, Paris).
Dictionnaire encyclopédique illustré (Armand Colin).
Cassell's E.F. & F.E. The New Edition with phonetic script pronunciation.

Pronunciation.

Geddes: French Pronunciation (Oxford Press—American Branch). Excellent for school library.
Passy-Hempl: International F.E. and E.F. Dictionary (N.Y. Hinds, Noble & Eldridge).
Dunmville: Elements of Phonetics (Dent).
A limited number of copies of the last named are available in the University Book Store, Vancouver. They will be sold to teachers only.

School Newspaper.

L'Écho de France (Evans Bros., Montague House, Russell Square, London). About 60 cents for 6 months.

Periodical.

L'Illustration (Weekly). 140 francs a year. 13 Rue Saint-George, Paris.
The following books would constitute a good school library. They are interesting and not too difficult. The longer novels may be had in abridged form from school publishers.

About: La Mère de la Marquise.
About: Le Roi des Montagnes.
Augier: Le Gendre de M. Poirier (Thomas Nelson & Sons, Toronto).
Balzac: Contes (Thomas Nelson & Sons, Toronto).
Bazin: Contes de Bonne Perrette.
Bazin: Les Oberlé.
Bruno: Le Tour de la France par deux Enfants.
Chapuzet & Daniels: Molière en Récits.
Chateaubriand: Atala.
Coppée: Dix Contes (Heath).
Daudet: Choix de Contes (Heath).
Daudet: Le Belle-Nivernaise.
Daudet: Le Petit Chose.
Daudet: Lettres de Mon Moulin (Thomas Nelson & Sons, Toronto).
Daudet: Tartarin de Tarascon.
Dumas: La Tulipe Noire.
Dumas: Les Trois Mousquetaires (Thomas Nelson & Sons, Toronto).
Dumas: Monte-Cristo.
Enault: Le Chien du Capitaine.
Erckmann-Chatrian: Le Conscrit de 1813.
Erckmann-Chatrian: Le Juif Polonais.
Erckmann-Chatrian: Madame Thérèse.
Feuillet: Le Roman d'un Jeune Homme Pauvre.
France: Le Crime de Sylvestre Bonnard.
Gautier: Jettatura.
Ch. M. Des Granges: An illustrated history of French literature. Copiously illustrated. May be obtained in French or in English. (Hatier, Paris.)
Gréville: Dosia.
Halévy: L'Abbé Constantin.
Hugo: Les Misérables (Thomas Nelson & Sons, Toronto).
Hugo: Quatre-vingt-treize.
Laboulaye: Contes Bleus.
La Brète: Mon Oncle et mon Curé (Thomas Nelson & Sons, Toronto).
Lesage: Gil Blas.
Loti: Pêcheur d'Islande.
Loti: Ramuntcho.
Maupassant: Huit Contes Choisis (Cambridge University Press).
Meilhac and Halévy: L'Été de la Saint-Martin. (Play.)
Mérimée: Chronique du Règne de Charles IX. (Thomas Nelson & Sons, Toronto).
Mérimée: Colomba.
Musset: Pierre et Camille (Thomas Nelson & Sons, Toronto).
Musset: Il faut qu'une porte soit ouverte ou fermée—On ne saurait penser à tout (Nelson, Toronto).
Saintine: Picciola.
Sand: La Mare au Diable.
Sand: La Petite Fadette.
Verne: Le Tour du Monde en Quatre-vingts Jours.
Verne: Vingt Mille Lieues sous les Mers.
Vigny: Cinq-Mars.
Vigny: Le Cachet Rouge.

1924/25

COMMERCIAL COURSE.

FIRST YEAR.

1. English.

(*a.*) Reading and Orthoepy.—Oral reading, with special attention to expression and pronunciation.

Text: 20th Century Fifth Reader.

(*b.*) English Literature.—As prescribed for Grade IX.

(*c.*) Grammar and Composition.—About the same time should be given to the study of general analysis of sentences and syntax in English grammar as is devoted to composition. No text-book in grammar is prescribed for pupils' use. A great deal of blackboard-work should be done in the construction of paragraphs restricted to two, then three, then four or five sentences. Blackboard-work in construction of plans of stories read in English literature, as a training in organization of material.

Text: High School English Composition, Western Canada Series (Copp, Clark Co., Ltd.), Chapters I.–IV., inclusive.

(*d.*) Spelling.—Words in common use, technical terms of financial, commercial, manufacturing, and transportation business. Words as found in the Fifth Reader and in the Commercial Text-books in use. Encouragement of the dictionary habit.

(*e.*) Penmanship.—The Commercial Edition of the MacLean Method of Muscular Movement Writing is to be used. Emphasis should be placed upon small, legible, rapid writing. Forearm muscular movement is to be used in all written work, for otherwise the benefit to be derived by practising muscular movement in the penmanship period only will be lost. Special attention should be given to the writing of business forms, as shown in the Manual. The teachers will use the Teachers' Manual as their guide.

Reference: The Business Educator (Zaner & Bloser, Columbus, Ohio).

2. History.

(*a.*) General outline only of Canadian history to the Confederation Act.

(*b.*) Intensive study of Canadian history from Confederation Act to the present.

(*c.*) History of British Columbia.

Text: History of Canada—Wrong (The Ryerson Press, Toronto).

References: Canadian History—Clement; History of British Columbia—Howay.

3. Arithmetic.

Pure and commercial arithmetic as in the Dominion High School Arithmetic, Revised Edition, the first ten chapters, or similar work in the older edition. Special attention should be given to the simple rules, with the view to rapid and accurate calculations.

Text: The Dominion High School Arithmetic, Revised Edition (Gage & Co., Ltd., Toronto); *or* The New Method Arithmetic (Commercial Text Book Co., Toronto); Rapid Calculation—Powers & Locker (Ginn & Co.).

4. Book-keeping and Accounting.

Double entry. Business transactions of single ownership involving the use of the journal, cash book, purchase book, sales book, bill book, and ledger; preparing simple financial statements and balance sheets; closing the ledger; the use of simple business forms; bills of goods, monthly statements, invoices, receipts, promissory notes, drafts, orders, deposit-slips, cheques, with endorsements, negotiability and discounts.

Text: 20th Century Book-keeping, Canadian Edition (South-Western Publishing Co., Cincinnati).

Books of reference:

Essential Exercises in Bookkeeping (South-Western Publishing Co., Cincinnati).
Book-keeping by Single & Double Entry—McIntosh (Commercial Text Book Co.).
Canadian Modern Accounting, Part I.—A. F. Sprott (Commercial Text Book Co., Toronto).

5. Shorthand.

The general theory of the Isaac Pitman system of shorthand as contained in the "New Era" Edition of the Canadian Course in Isaac Pitman Shorthand. The ability to write and transcribe at the rate of *forty words per minute* from prepared matter. The examination matter for this purpose to be selected from the reading and dictation practice given at the end of the prescribed text-book, and arranged with a syllabic intensity of 1.5 syllables per word.

Text: Canadian Course in Isaac Pitman Shorthand, The New Era Edition (Commercial Text Book Co., Toronto).

Reference: The Pitman Instructor.

6. Typewriting.

The development of the touch system of typewriting. Accuracy, not speed, is to be the essential factor of the training. A speed of twenty words per minute absolutely accurate will be considered worth 100 per cent. of the marks. A student who falls below ten words per minute accurate shall fail.

FINAL TESTS.—(*a.*) 200 words given and ten minutes allowed.

(*b.*) 10 minutes given and as many words as possible written.

NOTE.—Papers should be marked according to international rules—viz., 10 words will be deducted from the gross for each error, in order to determine the net speed.

(*c.*) A paper of elementary questions about the typewriter should be set, but the marks on such a paper shall not cause a student to pass who has failed, as above, by falling below 10 words per minute net.

Text: Smith's A Practical Course in Touch Typewriting, 1924 Edition (Isaac Pitman & Sons; Commercial Text Book Co., Toronto).

SECOND YEAR.

1. English.

(*a.*) READING AND ORTHOEPY.—Oral reading, with special attention to expression and pronunciation.

Texts: As in English Literature.

(*b.*) ENGLISH LITERATURE.—As prescribed for Grade X.

(*c.*) GRAMMAR AND COMPOSITION.—High School English Composition, Western Canada Series (Copp, Clark Co., Ltd.), Chapters I.–VIII., inclusive. Blackboard-work in discussion of errors in syntax arising out of pupils' exercises. Letter-writing; special attention to business forms and correspondence. Practice in social letter-writing in the hope of developing a literate style that is at the same time natural. Essays and themes. The examination on this subject, besides testing the pupil's knowledge of the prescribed text, will consist of an essay on one of four specified subjects, three of which will be from the English Literature prescribed for the year. Frequent and systematic practice in essay-writing throughout the year is imperative. The value attached to the examination paper will be apportioned by giving 20 per cent. to the questions on the work of the prescribed text, 30 per cent. to letter-writing, and 50 per cent. to the essay.

(*d.*) SPELLING.—Words in common use, technical terms of financial, commercial, manufacturing, and transportation business. Words as found in the prescribed texts in English Literature and in Commercial Text-books in use.

Reference: Dictation Course in Business Literature—Reigner (H. M. Rowe Company).

(*e.*) PENMANSHIP.—Principles and practice of muscular movement continued as in the Commercial Edition of the MacLean Method of Muscular Movement Writing.

Reference: Business Educator (Zaner & Bloser).

2. Civics.

A study of the Canadian Constitution as outlined in the B.N.A. Act. Duties and rights of citizens of Canada. Comparison of the Canadian, British, and American forms of Parliamentary Government. Our Law Courts.

Text: Canada as an Actual Democracy—Viscount Bryce (The Macmillan Co. of Canada, Ltd., Toronto).

Books of reference:

Modern Democracies—Viscount Bryce.
How Canada is Governed—Bourinot.
Canadian History—Clement.

3. Arithmetic.

(*a.*) An intensive study of the principles of percentage, including commission and brokerage, simple and compound interest, taxes, insurance, bank and trade discounts, exchange, stocks, insurance, investments, partial payments.

(*b.*) Mensuration, including the study of the triangle, circle, rectangle, cylinder, pyramid, cone, sphere.

(*c.*) Rapid calculation—Powers & Locker (Ginn & Co.).

Reference: New Method Arithmetic, Revised (Commercial Text Book Co., Toronto).

4. Book-keeping.

Principles and practice of double and single entry; the preparation, entering, and filing of business forms and vouchers; the use of special columns in books of original entry; the use of drafts with bank collections; the purchase book; partnership and sharing of profits by different methods; special forms and books necessary for simple commission business; simple principles of joint-stock book-keeping; methods of recording freight, duty, discounts, rebates and returns, bad debts; division of merchandise and expense accounts; trading, profit and loss, and asset and liability statements; bank reconciliations; petty-cash books.

Text: 20th Century Book-keeping, Canadian Edition (South-Western Publishing Company, Cincinnati, Ohio).

Reference:

Canadian Modern Accounting, Part 2 (Commercial Text Book Company).
Joint Stock Company Accounts—Hoskins (Shaw Correspondence School).
Essential Exercises in Book-keeping—Leidner-Rittenhouse (South-Western Publishing Company).

5. Shorthand.

Speed practice and the development of ability to take down and transcribe notes taken at the rate of *sixty, eighty,* and *one hundred words per minute.* Matter will be arranged of a syllabic intensity of 1.5 syllables to the word and five minutes continuous writing given at each rate. A perfect transcript of 100-words-per-minute piece will be necessary to make 100 per cent. marks; a perfect transcript of the 80-words-per-minute piece can only secure 80 per cent. marks; and a perfect transcript at 60 words per minute scores 60 per cent. Ten per cent. of material error or omission at any rate cancels the paper.

Text: (At the discretion of the teacher for the development of speed.)

Recommended:

The Pitman Shorthand Instructor, for higher theory.
The Universal Dictation Course—Pitman.

Books of reference for the teacher:

The Return of Sherlock Holmes, for reading material.
Business Correspondence in Shorthand.
Reigner's Dictation Course in Business Literature (H. M. Rowe Company).
Commentary on Isaac Pitman Shorthand—J. W. Taylor.

6. Typewriting.

The further development of speed; not more than 40 words per minute net accurate will be expected in order to obtain 100 per cent. Students failing below 20 words per minute net shall fail.

The work of this year shall include carbon-work, centring, the use and method of making stencils, arrangement and display of letters, easy tabulation comprising invoices and statistics.

The speed-work will be examined by:—

(*a.*) 400 words being given with 10 minutes allowed.

(*b.*) 10 minutes being given and as many words as possible written.

NOTE.—Deductions for errors as in first year.

(*c.*) A paper of questions may be given to test the student's general knowledge of the machine and the ability to do carbon, centring, display, etc., mentioned above; but this paper shall not compensate for failure at the minimum speed above mentioned.

Text: Smith's Touch Typewriting.

Reference:

High Speed in Typewriting—Kennedy & Jarrett (Commercial Text Book Co., Toronto).

Monthly tests of Typewriter Companies for awards.

7. Commercial Law.

Divisions of law; contracts; guaranty and suretyship; payments; promissory notes; acceptances; endorsement and consequent liability; banks and banking; due bills; orders and receipts.

Text: Summary of Commercial Law—Anger (The Copp, Clark Co., Ltd., Toronto).

Reference: Digest of Mercantile Law—Anger (The Copp, Clark Co., Ltd., Toronto).

THIRD YEAR.

1. English.

(*a.*) LITERATURE.—As prescribed for Junior Matriculation.

(*b.*) COMPOSITION.—As prescribed for Junior Matriculation.

2. Business Correspondence and Filing.

The tone of a business letter. The make-up of a business letter. Inquiry, contract, and routine letters. Adjusting complaints by letter. Collecting by mail. Sales letters; follow-up series; news value; giving your letters personality; the "you" interest. Telegrams; cablegrams; proof-reading. Manifolding. Filing; the loose-sheet system; the Shannon file; vertical filing; methods of indexing and alphabetical filing; numerical filing; direct name filing system; geographical filing; subject filing; follow-up; copying outgoing papers; card record systems; insurance, real estate, and follow-up card systems; document and cheque filing; the card ledger; stock record keeping.

Reference:

How to Write Business Letters—Smart (A. W. Shaw Co., New York).

Modern Filing (published by Office Specialty Manufacturing Co.).

Canadian Commercial Corespondence—Russel (The Macmillan Co. of Canada, Ltd., Toronto).

3. Commercial Geography.

The position, configuration, climate, and extent of the various parts of the earth's surface and their influence on the prosperity of a country.

The mineral, vegetable, animal, and fish productions of British Columbia, Canada, and various countries, stating where they are found, for what they are used. The manufactures of British Columbia, and of Canada, and of the United States. The chief railways and canals of Canada. The principal imports and exports of British

Columbia and Canada. The important trade routes of the world in relation to British Columbia.

Text:

Canadian School Geography—Cornish (Dent & Sons, Ltd., Toronto).

The Canadian School Atlas—Cornish (Dent & Sons, Ltd., Toronto).

Reference:

Industrial & Commercial Geography—Smith (Henry Holt & Co.).

The World's Commercial Products—Freeman & Chandler (The Macmillan Co. of Canada, Ltd., Toronto).

An intensified study of *one* of the following two courses:—

4. Secretarial. *Or*

(*a*.) SHORTHAND.—The development of note-taking and correct transcription at rates of *eighty, one hundred*, and *one hundred and twenty words per minute.*

Five minutes continuous dictation at each rate, with a syllabic intensity of 1.5. Students' ability determined in the same way as in the second year. Ten per cent. of material error or omission cancels any paper, while an absolutely correct transcription of the 80 piece can only secure 60 per cent. of the marks, a 100-words rate secures 80 per cent., and 120-words rate secures 100 per cent.

The Third-year Course is an intensive course aiming to produce a really finished product in the stenographic art. While the training is general, the teacher is recommended to encourage his students to each select a special line of business that appeals to his or her temperament and ambition, and to make that a special study.

Texts:

The Pitman Shorthand Instructor.

Dictation material at the discretion of the teacher.

Advanced Dictation and Secretarial Training—Reigner.

The Universal Dictation Course—Pitman.

One or other of the following phrase books for special lines of business: Legal; Electrical and Engineering; Railway and Shipping; Insurance; Banking; Stockbroking and Financial; Printing & Publishing; Lumbering. Various others are available. (No examination will be given on these texts.)

5. Accounting.

(*a*.) ACCOUNTING, THEORY OF.—Double and single entry; receipts and disbursements; revenue and expenditure; capital and revenue expenditure; deferred charges and deferred credits; accrued assets and liabilities; reserves—general and special—and reserve funds; bonds and debentures; principles of simple cost accounts; goodwill, depreciation, suspense accounts.

(*b*.) ACCOUNTING, PRACTICE OF.—Controlling accounts and self-balancing ledgers; special column cash books and synoptic journals adapted to various types of business, branch, and departmental accounting; expense analysis and percentage statements, charts, partnership adjustments, bill and charge, loose-leaf systems, recapitulation statements and other modern devices for saving time and labour; statements of affairs; joint-stock company book-keeping; simple manufacturing costs.

Texts:

20th Century Book-keeping, Canadian Edition (South-Western Publishing Co., Cincinnati, Ohio).

Essential Exercises in Book-keeping.

Canadian Modern Accounting (Commercial Text-book Co.).

Accounting, Theory & Practice—Lisle (William Green & Sons, Edinburgh).

Principles of Factory Cost Keeping—Moxey (Ronald Press, New York).

(*b*.) HIGHER ARITHMETIC.—(1.) Review of the Second-year Course.

(2.) Partnerships adjustments and problems relating to joint-stock companies.

GENERAL NOTE.—Where certificates are issued the rate of speed attained will be endorsed thereon. Candidates may offer for higher rates of speed on application, and success therein will be so endorsed on certification.

(*b.*) TYPEWRITING.—Further development of speed; not more than 60 words per minute shall be required (net accurate) to obtain 100 per cent., and students falling below 40 words per minute net shall fail.

The work of the year shall include all kinds of work that may be expected from a junior typist in a general office.

The speed-work will be examined by:—

(*a.*) 900 words being given and 15 minutes being allowed.

(*b.*) 15 minutes being given and as many words as possible written.

NOTE.—Deductions for errors as before.

(*c.*) A general paper may be given, but shall not compensate for failure to attain the minimum speed of 40 words per minute.

GENERAL NOTE.—Tabular matter shall not form part of speed tests. To preserve uniformity of standard on variable matter, five typewriter strokes shall be considered as one word.

Texts: Third Year—High Speed in Typewriting—Kennedy & Jarret (Commercial Text Book Co., Toronto). Additional material at the discretion of the teacher.

(*c.*) STENOGRAPHIC PRACTICE.—An examination will be held to test the general ability of the students. The test will consist of five letters having a minimum total of 600 words. These letters will be dictated at a rate not over *eighty* words per minute and the shorthand then transcribed on the typewriter with addressed envelopes and carbon copies in one hour.

(3.) Use of tables in solving problems in compound interest and annuities.

(4.) Graphs.

(5.) Rapid calculation.

Texts: Dominion High School Arithmetic; New Method Arithmetic (Commercial Text-book Co.).

Reference:

Theory of Finance—King (Charles & Edward Layton, London).

Interest and Bond Values—MacKenzie (University Press, Toronto).

(*c.*) COMMERCIAL LAW.—Statute of Limitations; chattel mortgages on real estate; property, landlord and tenant; partnership; principal and agent; master and servant; joint-stock companies; Mechanics' Lien Act; wills.

Text: Anger's Summary of Commercial Law (The Copp, Clark Co., Ltd., Toronto).

Reference: Digest of Mercantile Law—Anger (The Copp, Clark Co., Ltd., Toronto).

HIGH SCHOOL TECHNICAL COURSE (BOYS).

While the main object of this three years' course is to train students for specialized technical courses during the fourth, fifth, and succeeding years in the Technical School, yet students should have the privilege of being prepared for the University Matriculation Examination. These students, however, should be taught in a separate class, for while the content of both technical and matriculation courses may be similar during the first year, yet it is obvious that in the second and more especially the third year there must be a considerable difference in the requirements for the two courses.

FIRST YEAR.

English.

READING AND ORTHOEPY.—As prescribed for Grade IX.

PENMANSHIP AND SPELLING.—As prescribed for Grade IX.

LITERATURE.—As prescribed for Grade IX.

COMPOSITION.—As prescribed for Grade IX.

SUPPLEMENTARY READING.—Biographies of Men of Science; Inventors and Captains of Industry; Short Stories from Modern Authors; Duty, Character, Thrift, Life and Labour, "Life of James Nasmyth"—Smiles (John Murray, London).

Citizenship and Economics.

As in prescribed text-book, Jenkins' Canadian Civics; Simple book-keeping.

Reference books:

Outlines of Economics—R. E. Nelson (G. Bell & Sons).

How We Pay Each Other—Wood (Macmillan & Co).

Common-Sense Economics—Le Mesurier (John Murray, London).

History (for students taking the course leading to Matriculation).

As prescribed for Grade IX.

French (for students taking the course leading to Matriculation).

As prescribed for Grade IX.

Mathematics.

ARITHMETIC.—Simple rules; square root; fractions and decimals complete; weights and measures; areas. Board measure; metric system; mensuration of rectangular solid and cylinder; percentage and simple applications (profit and loss; trade discount; duties; taxes; fire insurance; commission; simple and compound interest).

Text-book: Dominion High School Arithmetic.

ALGEBRA.—Simple rules; use of brackets; simple equations; simultaneous equations (two unknowns); simple binomial factors; square root; simple rules illustrated by simple geometrical representations.

Text-book: Hall & Knight's Algebra.

EXPERIMENTAL GEOMETRY.—Exercises 1-68; 85-104; 122-138; 152-182; 293-318, inclusive.

THEORETICAL GEOMETRY.—Theorems 1-14. Constructions—construction of a triangle given the three sides. Construction of an angle equal to a given angle. Bisection of a given angle. Bisection of a given straight line. Construction of perpendicular to a given straight line from a given point inside or outside the line.

In dealing with Experimental Geometry, teachers are not expected to make any attempt to do all the exercises with their classes, but to make such selections from the given list as may be necessary to give their students a sound knowledge of elementary geometrical ideas.

Text-book: Elementary Geometry—Godfrey & Siddons (The Macmillan Co. of Canada, Ltd.).

Books of reference:

Plane and Solid Geometry—Morris and Husbands (Longmans, Green & Co.).
Mathematics, Science and Drawing—Castle (Routledge & Son, London).
An Introduction to Practical Mathematics—Saxelby (Longmans & Co.).
Elementary Treatise on Graphs—Gibson (Macmillan).
Vocational Mathematics—Dooley (D. C. Heath & Co.).

Mechanics.

As far as possible the principles of mechanics should be obtained by the students themselves in a series of well-graduated exercises, and no attempt should be made to introduce formulæ in the first year except such as are discovered by carefully trained students. Every note-book should show under the headings "Experiments" and "Observations" that a student knows what he is doing and what he sees, but the inferences to be drawn from such experiments may well be given as the result of careful summarization of the individual work of the student by the teacher. Illustrations in extension of principles may well serve as the basis of oral lessons by the teacher, but no attempt need be made in the first year to allow of the use of a text-book by the student, the object in all parts of the subject being training and not the acquisition of facts.

(*a.*) STATICS.—Force; easy numerical examples. Levers; experiments with the three orders; mechanical advantage. Principle of moments; easy practical applications—viz., pincers, clawhammers, cantilevers, etc. The wheel and axle; velocity ratio; the principle of work; first and second system of pulleys.

(*b.*) GRAPHICS.—Parallelogram and triangle of forces; inclined plane without friction, with pull (*a*) parallel to plane, (*b*) parallel to base, to be treated at first graphically—i.e., apply triangle of forces. Wedge, application of the principle of the triangle of forces. Screw, application of the principle of the triangle of forces.

(*c.*) DYNAMICS.—Kinematics, time, space, change of position, relative motion, uniform and variable velocity. Relation between velocity, distance passed over, and time. Numerous diagrams will be made by pupils to enable them to educe necessary formulæ. Acceleration, relation between time, distance, and acceleration shown by acceleration graphs. Formulæ derived from diagrams.

Text-book: Elementary Mechanics—Morley & Inchley (Longmans, Green & Co.).

Books of reference:

Applied Mechanics—Jamieson (Griffin & Co., London).
Theoretical Mechanics—J. Edward Taylor (Longmans, Green & Co.).
Mechanics—Merchant & Chant (The Copp, Clark Co., Ltd., Toronto).

Physics.

Simple treatment to be amplified during the second year.

Matter—nature of; molecules; molecular theory; states of matter. Properties of solids—tenacity; malleability; plasticity; elasticity; tempering and annealing. Properties of liquids—capillarity; buoyancy; surface tension; Archimedes' principle; flotation; Pascal's principle; hydraulic jack; hydraulic elevator and lift-lock. Properties of gases—expansive force; weight; buoyancy; principle of the dirigible; pressure of the air; the barometer; specific gravity and density of solids and liquids—laboratory work. Easy hydrostatics—fluid pressure at a point; total pressure on an area; cause of pressure—pumps, siphons, valves, air-pumps, exhaust and force. Compressed-air appliances—the door-check; pneumatic tires; air-cushions; metric system.

Heat.

What it is. Sources—friction; electricity; compression; percussion; chemical action; the effects, expansion of solids, liquids, and gases; coefficient of expansion; application of expansion. Thermometers, their scales and conversion; metallic thermometer; thermostat; rivets; boiler-plates; steam-pipes and expansion-joints; air

thermometer; Charles' Law; change of state; fusion; vaporization; latent heats; specific heats; heat measurement, calorie, B.T.U.; laws of fusion and vaporization; crystallization; heat transference and application in the range, boiler, warm-air and hot-water furnaces, heating plants; exhaust steam; mechanical equivalent of heat; radiation and absorption.

Text-books and books of reference:

General Science—Caldwell & Eikenberry (Ginn & Co.). Price, $1.
Laboratory Manual for same. Price, 50c.
Elementary Practical Physics—Watson (Longmans, Green & Co.).
The Ontario High School Physics.
Laboratory Manual for same.
Practical Physics—Carhart & Chute (Allyn & Bacon).

Drawing and Design.

(*a.*) FREEHAND SKETCHING.—To develop free and quick execution.

(*b.*) GEOMETRICAL DRAWING.—To master the instruments and learn the fundamentals of mechanical drawing.

(*c.*) ORTHOGRAPHIC PROJECTION, SECTIONS, AND THE DEVELOPMENT OF SURFACES.—To make working drawings.

(*d.*) LETTERING.—The cultivation of a clear, well-formed rapid style.

(*e.*) ELEMENTS OF DESIGN.—To see beauty in line, form, and colour, with application to shop-work.

(*f.*) ELEMENTARY DESCRIPTIVE GEOMETRY.

Text-books and books of reference:

Studies in Line and Mass—E. A. Branch (Ralph Holland & Co., London).
Lessons in Decorative Design—Jackson (Chapman & Hall, London).
Furniture Design—Crawshaw (Manual Arts Press).
Geometry for Art Students—Carroll (Burns & Oates, London).
Geometrical Drawing for Schools and Colleges—C. H. McLeod, M.E. (Foster, Brown & Co., Montreal).
Plane & Solid Geometry—Morris & Husbands (Longmans, Green & Co., Ltd.).

Shop-work.

(1.) WOODWORK.—Students will be expected to have completed the Elementary School Manual Training Course and have obtained a diploma in woodwork. They should then proceed with problems calling for exact draughtsmanship and the translation of the drawing into material of wood or metal.

Those students who have not had previous training in woodwork should follow an equivalent course which will permit them to proceed as rapidly and thoroughly as possible.

(*a.*) *Bench-work.*—The course should consist of such problems as will call for that fundamental knowledge which is expected in industrial life; draughtsmanship, craftsmanship, and taste.

Problems may consist of articles of furniture made by individual students or may be community problems carried out by groups of pupils. Such experimental apparatus as may be useful in emphasizing scientific principles may be made in this lesson period, provided the work does not conflict with the objects of the course.

(*b.*) *Making Working Drawings.*—It is desirable that all drawings should be made in accordance with good drawing-office practice, that parts should be lettered or numbered, and that schedules showing the name symbol, materials, and other particulars as necessary should be made on the drawings. The systems in vogue should be discussed by the teacher and the importance of symbols and scheduling in connection with costing and workshop procedure should be pointed out.

(*c.*) *Wood-turning.*—The fundamental exercises in lathe-work should first be taught in order that manipulative skill in correct handling of tools may be acquired. Skill in hand and eye are demanded from the wood-turner, and the student should

aim at dexterous handling of the tools and at an appreciation of subtle form. The practice models can usually be put to valuable use in the work of mechanics. For instance, cylinders may be cut obliquely for examples in stability; long- and short-cut exercises when completed may be made very useful as examples in conic sections; parting-tool exercises may readily furnish many pieces which can afterwards be used as reels for resistance coils, etc.

Reference books:

Problems in Wood-turning—Crawshaw (Manual Arts Press). Price, $1.

Furniture Design for Schools and Shops—Crawshaw (Manual Arts Press). Price, $1.75.

Handcraft in Wood and Metal—Hooper & Shirley (Batsford). Price, $2.50.

(2.) SHEET-METAL WORK.

(*a.*) *Practice.*—Objects involving the development of the cylinder, rectangular prism, cone, and splayed work, introducing the following methods of fastening: Butt, lap, and lock seam joints. Soldering by means of soldering-copper. Simple wiring in the flat. The following machines may be used: Burring, turning, folding, and forming.

(*b.*) *Theory.*—Solder, its composition and manufacture; fluxes, kinds and choice. Manufacture of tinplate and galvanized iron. Grades, cost, calculation of stock. Mensuration of all objects constructed. Capacity of all containers. Designing containers to hold a given quantity of material. Cost of material and labour.

Text-book: Essentials of Sheet-Metal Working—Daugherty (Drake & Company).

(3.) FORGE-WORK.

The Forge.—Description; types; the proper building and care of the forge fire. Kinds of fuel; effect of excessive blast; scaling; oxidizing.

Projects.—Numerous exercises in drawing out and bending, using stock not heavier than ⅜-inch round. Practice in tool manipulation. Stakes, staples, eyebend, double eye, meat-hook, gate-hook, ring-bend, and such similar articles. Drawing-out exercises—square to square, square to round, round to round, round to cone.

A simple weld in ¼-inch round stock makes an interesting change and one easily within the range of a boy at the end of his first year. A chain-link is suggested as suitable.

Calculations for stock are most important and the exercises suggested afford every opportunity for the teaching of workshop mathematics. To find the cost of the object by calculating the time and material should form part of the instruction in this work.

Text-book: Exercises for Forge Shop Practice (Buffalo Forge Co., Buffalo, N.Y.). Price, 50c.

Reference books:

Hand Forging—Wrought Iron—Googerty (Popular Mechanics Co., Chicago).

Forging of Iron and Steel—Richards (Van Nostrand).

(4.) MACHINE-SHOP WORK.

(*a.*) *Workshop Drawing.*—(1.) Instrumental drawings, use of different lines and their meaning. (2.) Notations—method of using and importance. (3.) Titles—various methods used; relation of component parts in detail drawings to assembly drawing.

(*b.*) *Shop Science.*—How to distinguish metals; the theory of polishing; methods of polishing; methods of fastening metals together; multiple threads.

(*c.*) *Shop Organization and Methods.*—(1.) Simple outline of modern production methods. (2.) Making of simple chucking diagrams.

(*d.*) *Machine-work.*—Drilling: (1.) Locating holes in thin metal and drilling same. (2.) Simple countersinking. (3.) Drilling deep holes in round stock in lathe and drill-press.

(*e.*) *Bench-work.*—Filing; rough filing; filing to a line; filing to an angle (template); draw-filing; use of bending-jigs.

Drilling and tapping: Laying out holes; tap-drill sizes; threading with stocks and dies.

Riveting: Fastening parts together with countersunk rivet.

Bending: Cold bending over mandrel.

Text-books:

Machine Sketching and Drawing for Night School Students (Copp, Clark Co.). Price, 37c.

Machine Shop Practice—Kaup (Wiley & Sons).

Reference books:

Principles of Machine Work—Smith (Industrial Education Book Co., Boston).

Machine Construction and Drawing—Ingham (Routledge & Sons, London).

A Manual of Machine Drawing and Design—Low & Bevis (Longmans, Green).

Machine Drawing, Books I. and II.—T. Jones and T. G. Jones (Heywood, Manchester, England).

A Primer of Engineering Science—Ewart S. Andrews (James Selwyn & Co., London).

SECOND YEAR.

English.

READING AND ORTHOEPY.—As prescribed for Grade X.

PENMANSHIP AND SPELLING.—As prescribed for Grade X.

LITERATURE.—As prescribed for Grade X.

COMPOSITION.—As prescribed for Grade X.

SUPPLEMENTARY READING.—First-year Course continued.

Citizenship and Economics.

First-year Course continued. Simple book-keeping.

PROVINCIAL AFFAIRS.—The Provincial Government. Municipal Government. Courts of Law. Education.

RIGHTS AND DUTIES OF THE CITIZEN.

Text-book: Jenkins' Canadian Civics.

Reference books:

Outline of Economics—R. E. Nelson (G. Bell & Sons).

How We Pay Each Other—Wood (Macmillan & Co.).

Common-Sense Economics—Le Mesurier (John Murray).

History (for students taking the course leading to Matriculation).

As prescribed for Grade X.

French (for students taking the course leading to Matriculation).

As prescribed for Grade X.

Mathematics.

ARITHMETIC.—Commercial arithmetic; bank discount and bank interest; partial payments; present worth of stocks and bonds; exchange; extended application of percentages. Mensuration extended to the cone, sphere, and pyramid. Trigonometric ratios of sine, cosine, and tangent, and application of angles of 45 degrees, 30 degrees, and 60 degrees.

Text-book: Dominion High School Arithmetic.

ALGEBRA.—Factors; simultaneous equations (three unknowns); H.C.F. and L.C.M.; fractions; problems in simple and simultaneous equations; quadratics; simple graphs—Hall & Knight's Elementary Algebra.

GEOMETRY.—Godfrey & Siddons, Elementary Geometry.

Book I., beginning with Theorem 16—Inequalities in the triangle; the parallelogram; loci.

Book II. Area of parallelogram, triangle, polygon, and equivalence of areas, Pythagoras' Theorem. Geometrical illustrations of algebraical identities.

Book III. The Circle—Chord and centre; relations of arcs, angles, chords; the tangent; contact of circles; angle properties to page 260.

NOTE.—The course should be taught and treated and applied whenever possible from the practical view-point.

Reference books:

An Introduction to Practical Mathematics—Saxelby.

A Course in Practical Mathematics—Saxelby (Longmans & Co.).

Applied Mechanics.

Experiments and observations should precede the explanations, thus giving the pupils an opportunity of drawing their own conclusions without suggestion or anticipation. Neat sketches of the apparatus used should accompany the notes taken. The inferences or explanations will follow in proper sequence.

Questions dealing with work and horse-power; diagrams for variable loads; levers; compound, bent, inclined forces; systems of parallel forces; centre of and resultant of parallel forces; couples. The differential wheel and axle, Weston pulley-block, mechanical advantage, velocity ratio, mechanical efficiency, and theoretical advantage; revise inclined plane, screws, forms of screw-threads, right and left hand, single and double thread; screw and lever in combination, practical examples; worm and worm-gear, differential screw, conversion of motion and transmission of power, belts open and crossed, fixed and loose pulleys, friction-wheels, tooth-gears. The laws of friction, machine analysis.

GRAPHIC STATICS.—Forces in simple frames.

HYDROSTATICS.—The pressure of water, principle of Archimedes; Pascal's Law, examples; machines for raising water, pumps, lift-pumps, force-pumps.

DYNAMICS.

(*a.*) *Kinematics.*—Revision and amplification of first-year work.

(*b.*) *Kinetics.*—Simply treated.

Text-book: Elementary Mechanics—Morley & Inchley (Longmans, Green & Co.).

Books of reference:

Applied Mechanics for Beginners—Duncan (The Macmillan Co., Ltd.).

Applied Mechanics—Cryer & Jordon.

Applied Mechanics—Jamieson (Chas. Griffin & Co., London).

Theoretical Mechanics—J. Edward Taylor (Longmans, Green & Co.).

Mechanics—Merchant & Chant (The Copp, Clark Co., Ltd.).

Physics.

SOUND.—How produced; periodic and aperiodic vibrations; music *vs.* noise; transmission, wave theory; rate of transmission in solids, liquids, and gases; intensity and laws governing it; amplitude, reflection; echoes; speaking-tubes; acoustical requirements for auditoria; pitch, musical scales, vibrations of strings; plates, rods, and organ-pipes, with the production of overtones or harmonics; the guitar, violin, flute, cornet, French horn, fugle, clarinet, trombone, the human ear, the human voice.

LIGHT.—Nature; how propagated; reflection from plane mirrors; concave and convex mirrors; images; photometry; candle-power; intensity of illumination; candle foot; Bunsen's and Rumford's photometers. Refraction; index of refraction; total reflection; prisms, lenses, prismatic reflectors, luxfer prisms; images produced by lenses, real and virtual; determining focal length of lenses; the simple microscope; compound microscope; the camera; principles and practice of photography; human eye, binoculars, terrestrial and astral telescopes, dispersion, colour, colour values, spectroscope and its use; polarimeter and polarized light—principles involved.

MAGNETISM.—Natural and artificial magnet; permanent and temporary magnets, polarity, magnetic field; induced magnetism and methods of induction; retentivity,

magnetic attraction and repulsion; terrestrial magnetism, mariner's compass, geographic and magnetic poles, inclination and declination, the dipping needle, isogonic and isoclinic lines.

ELECTRICITY.—Voltaic cells, simplest forms, current flow, nature of electrical current; conductors and non-conductors; polarization and methods of depolarization; some of the most common types of cell and the probable chemistry of these; galvanoscope; field of force about a conductor; galvanometer, electromagnet; electric bell; telegraph signals; voltmeter, ammeter; chemical effect of the current; electrolysis, electrolytes, electroplating, electrotyping, electrometallurgy; secondary and storage cells; electrical measurements, ohms, volts, amperes; tangent galvanometer; Wheatstone bridge and modifications; voltameters; heating effect; incandescent lamp; arc lamp; electric furnace; induced currents; laws of induction; induction-coil; spark-coil; direct-current dynamo; making models of same; the telephone, transformer; grouping cells and generators; problems.

Text-books and books of reference:

The Ontario High School Physics (Copp, Clark Co., Ltd.).
Practical Physics—Carhart & Chute (Allyn & Bacon).
Elementary Practical Physics—Watson (Longmans, Green & Co.).
A Laboratory Course of Practical Electricity—Archbold (Macmillan & Co.).
Elementary Lessons in Electricity and Magnetism—Silvanus Thompson (Macmillan & Co.).
Library of Practical Electricity—Tyrell Croft (McGraw Hill Book Co.). Price, $14 per set.

Chemistry.

Solution, crystallization, filtration, saturation, natural waters, air in water, solids in water.

AIR.—Oxygen and nitrogen, mixtures and compounds, combustion, effect of plant-life on atmosphere, effect of combustion and animal life on air.

WATER.—Hydrogen, preparation and properties, chemical composition of pure water.

Drawing and Design.

(*a.*) Workshop sketching of machine parts.
(*b.*) Tracing and blue-printing.
(*c.*) Geometrical drawing.
(*d.*) Othographic projection, sections, and the development of surfaces.
(*e.*) Lettering.
(*f.*) Design.

Text-books and books of reference:

Furniture Design—Crawshaw (Manual Arts Press).
Studies in Line and Mass—E. A. Branch (Ralph Holland & Co., London).
Copper Work—Rose (The Davis Press, Worcester).
Descriptive Geometry—H. F. Armstrong.
Geometrical Drawing for Schools and Colleges—McLeod (Foster Brown, Montreal).
Plane & Solid Geometry—Morris & Husbands (Longmans, Green & Co.).

Shop-work.

(1.) WOODWORK.—Individual projects of a more difficult nature than in first year. Community work on a larger scale. The problems should call for draughtsmanship, design, craftsmanship of a higher order than heretofore, and cost of material and time should be carefully calculated.

Lathe-work.—Projects which call for more modelling than in the first year. Face-plate and chuck turning. Finishing and polishing.

Text-books and books of reference:

Furniture Design for Schools and Shops—Crawshaw (Manual Arts Press).

Handcraft in Wood and Metal—Hooper & Shirley (Batsford).

Carpentry—Griffith (Manual Arts Press).

Problems in Wood-turning—Crawshaw (Manual Arts Press).

(2.) SHEET-METAL WORK.

(*a.*) *Practice.*—Continue work of the first year, but with objects of increasing difficulty in development and construction; for instance, pipe-work involving intersections of cylinders at various angles. Conic sections should be studied. The following machines may be used: Wiring, setting-down, double-seamer.

(*b.*) *Theory.*—Solders and fluxes; calculation of stock; mensuration of all objects constructed; cost of material and labour.

Text-book: Essentials of Sheet-metal Working—Daugherty (Drake & Co.).

(3.) FORGE-WORK.—A little heavier stock may now be introduced, and in addition to first-year exercises, upsetting, punching, bending, twisting, and welding should be taken up, and a beginning made in tool-making.

(*a.*) *Upsetting.*—In preparation for bending in rectangular stock such as bracket; in preparing scarf for welding, etc.

(*b.*) *Punching.*—Expanded ring, clamps, etc.

(*c.*) *Twisting.*—Ornament for light tools such as scriber, brace for bracket.

(*d.*) *Welding.*—Several welds which do not require much tool manipulation, such as ring-weld, welded eye, pile or faggot weld.

(*e.*) *Tool-steel.*—Emphasis on careful handling and why; hardening and tempering of some light articles, such as punch, scriber, screw-driver.

Time and material should always be calculated in order to arrive at the cost of the article.

Text-book: Exercises for Forge Shop Practice (Buffalo Forge Co., Buffalo, N.Y.). Price, 50c.

(4.) MACHINE-SHOP WORK.

(*a.*) *Practice.*—Lathe-work; rough and finish turning between centres; taper turning with compound rest; turning with automatic hand-feed; knurling.

Limit measurements, $^1/_{128}$" + (Vernier gauge).

(*b.*) *Shaping.*—Planing parallel sides to thickness in vice attachment; squaring ends; use of automatic feed.

(*c.*) *Drilling.*—Locating and drilling holes accurately placed; use of centre drill.

(*d.*) *Bench-work.*—Accurately laying out metal and centre dotting; removing thin stock with chisel and vice; sawing a deep slot accurately; riveting by reducing; loose riveting; tapping and use of stocks and dies on long threaded work.

(*e.*) *Workshop Drawing.*—Limit systems of dimensioning; use of various finish symbols; detail and assembly drawings.

(*f.*) *Shop Science.*—Standardization as a means of production. Hardening and tempering. Methods of locating centres on work for lathe. The shaper mechanism. The simple functions of the lathe; drilling in lathe; tapping in lathe.

Text-books and books of reference:

Principles of Machine Work—Smith (Industrial Education Book Co., Boston).

Machine Shop Practice—Kaup (Wiley & Sons).

THIRD YEAR.

NOTE.—Students who desire to pass the Junior Matriculation Examinations will take the regular course for Junior Matriculation. (*See* Grade XI.)

English.

LITERATURE.—Same as for Junior Matriculation.

COMPOSITION.—Same as for Junior Matriculation.

SUPPLEMENTARY READING.—Heroes of Science, published by Society for Promoting Christian Knowledge; Short Stories from Modern Authors.

Citizenship and Economics.

BOOK-KEEPING AND BANKING.

NATIONAL AFFAIRS.—The Empire, the Dominion and Provinces, how laws are made, how parliament does business, the Premier and Council, political parties, how elections are held, departments of government, taxation.

Text-books and books of reference:

Canadian Civics—Jenkins.

Outlines of Economics—R. E. Nelson (G. Bell & Sons).

How We Pay Each Other—Wood (The Macmillan Co., Ltd.).

Common-Sense Economics—Le Mesurier (The Macmillan Co., Ltd.).

Mathematics.

ARITHMETIC.—Contracted methods; approximations with small values; mensuration, using logarithms; commercial arithmetic.

Text-book: Dominion High School Arithmetic.

ALGEBRA.—Use of formulæ, quadratics, simple quadratic equations, indices, surds, ratio and variation, arithmetic and geometric progressions, logarithms.

Graphs—interpolation, graph of quadratic and cubic functions, graphic solution of problems, maxima and minima, the linear law, area of curves, mean ordinate.

Text-books: Hall & Knight's Elementary Algebra; Saxelby's Introduction to Practical Mathematics.

GEOMETRY.—The circle—tangency, constructions on the circle, circles and rectilineal figures, rectangles in connection with circles. Geometrical equivalents of algebraical formulæ, practical treatment of proportion, similar triangles and polygons, proportion applied to areas.

Text-book: Hall & Stevens' School Geometry (London Edition).

TRIGONOMETRY.—Trigonometrical functions, graphs of functions; the right-angled triangle, solution of triangles, simple cases of compound angles, logarithms, solution of triangles by arithmetic and logarithmic methods.

Text-book: Playne & Fawdry's Practical Trigonometry.

Books of reference:

Harrison & Baxandall's Practical Plane Geometry.

Palmer's Practical Mathematics for Home Study.

Hawkes, Luby, and Touton's Second Course in Algebra.

Applied Mechanics.

The whole of the matter appearing in applied mechanics by Morley & Inchley, together with the matter enumerated below not appearing therein, including principle of work and its application to machines. Friction, static and kinetic, co-efficient. Angle of repose, work absorbed by friction, friction usefully applied by clutches and brakes. Dynamometers—Kelvin and Proney brake. Screws, belt-gears, tooth-gearing, various motions—quick returns, cams, ratchets, links.

The type of work undertaken should provide an opportunity for the student to turn his knowledge of mathematics to practical use.

Practice in machine analysis should be afforded.

STRENGTH OF MATERIALS.—Stress, strain, elasticity, Hook's Law, modulus of elasticity, factor of safety, strength of cylindrical vessels to resist fluid pressure, riveted joints.

GRAPHIC STATICS.—Reciprocal diagrams of roof-trusses, cranes and frame structures. Bending moment and bending-moment diagrams.

HYDROSTATICS.—The fundamental principles of hydrostatics, water-pressure on dams, sluices, etc.; hydraulic press, accumulators, lifts, cranes, buoyancy, hydrodynamics, orifices, head, energy, flow, water-wheels, turbines, Pelton wheels, reciprocating pumps.

DYNAMICS.—Kinetics: Newton's three laws, with a special emphasis on the second one. The unit of force—dynamical and gravitational. The fundamental kinetic equation ($P=mf$). Energy: potential, kinetic.

HEAT ENGINES.—Simple introduction to heat and gasolene engines; Hero's, Savery's, and Newcomen's engines, Watt's single and Watt's double-acting engine. Description of a double-acting engine. The D. slide-valve eccentric, etc. Relative positions of these parts. Lap, lead, angle of advance. Diagram of work. The indicator, I.H.P., Boyle's Law, Stephenson's link motion. Heat—specific heat, water equivalent, mechanical equivalent of heat, properties of steam, sensible and latent heat; wet, dry, and superheated steam. Internal-combustion engines; the four and two cycle.

Text-book: Elementary Mechanics—Morley and Inchley (Longmans, Green & Co.).

Reference books:

Mechanics—Merchant & Chant (The Copp, Clark Co., Ltd.).

Applied Mechanics—Cryer & Jordan.

Applied Mechanics—Jamieson (Chas. Griffin & Co., London).

Theoretical Mechanics—J. Edward Taylor (Longmans, Green).

Heat Engines—Ripper (Longmans, Green).

Gas Engine Principles—Whitman (Appleton & Co.).

Physics.

Topics taken in first and second years more fully amplified. Work done by heat. Work done by steam. Co-efficient of expansion of solids, liquids, and gases. Charles' Law. Gas thermometer. Absolute temperature. Measurement of heat. Thermal capacity—specific heat. Change of state. Determination of the heat of fusion of ice. Determination of heat of vaporization of water.

Electricity.

In addition to the topics taken in the first- and second-year courses the following new work will be included. The recapitulatory work, whilst under the same heads, will of necessity be of an advanced character and will lead to problems of a practical nature—e.g., in dealing with calculations under Ohm's Law, instead of confining the problems to continuous current, alternating-current problems dealing with both resistance, reaction, and capacity will be undertaken.

NEW TOPICS.—Electromagnets, generator and motor fields, D.C. and A.C. magnets—calculations on same; watt and power equations and problems. Electrical horse-power; kilowatt and kilo-volt; ampere.

Conductors; sizes, calculations, line drop. Line calculations, transmission and transmission lines.

Watt meters, indicating and integrating; single and polyphase meters; construction and use.

Magnets; permeability, induction, flux density, hysteresis, saturation, hysteresis losses. Induction, inductance, Lenz's Law.

Back E.M.F. computations of inductances. Transformers in detail.

Cycle, frequency, A.C. generators, meaning of the terms instantaneous, mean, average, and root-mean-square, voltages. Current in A.C. circuits. Ohm's Law in A.C. circuits—power factor. Lag and lead.

Alternating-current calculations, vector diagrams, circle diagrams.

Distribution, high and low tension, single and polyphase. Induction and synchronous motors.

Text-books and books of reference:

Ontario High School Physics and Laboratory Manual.

Practical Physics—Carhart and Chute (Allyn & Bacon).

Library of Practical Electricity—Tyrell Croft (McGraw Hill Book Co., New York).

Elementary Lessons in Electricity and Magnetism—Silvanus Thompson (Macmillan).

Chemistry.

Carbon, carbon dioxide, carbon monoxide, coal, charcoal, coke, coal-gas, flame. Chalk, lime. Salt—common, sodium, and chlorine. Properties of spirits of salt. Bleaching-powder. Sulphur dioxide and sulphurous acid. Sulphur trioxide and sulphuric acid. Acids, alkalies, and bases.

Drawing and Design.

Workshop sketching, scale-drawing, tracing, blue-printing, tinting, drawing machine parts.

DESIGN.—Principles of design, spacing, proportion, appropriateness. Design for wrought metal, sheet metal, terra cotta, wood construction, decoration of woods.

ART GEOMETRY.—Pattern-drawing and planning out designs.

DESCRIPTIVE GEOMETRY.—Orthographic projection of points, lines, solids, sections, intersections of planes.

LETTERING.—A clear, well-formed style.

Lessons in art appreciation.

Text-books and books of reference:

Descriptive Geometry—H. F. Armstrong.

Art Geometry—Carroll.

Lessons in Decorative Design—Jackson (Chapman & Hall).

Studies in Line and Mass—E. A. Branch (Ralph Holland, London).

Practical Wood-carving—Rowe (Batsford, London).

Artistic Craft Series (published by John Hogg, London).

Heraldry, bookbinding, silverwork, and jewellery, wood-carving, wood-block printing, writing and illuminating, stained glass.

Principles of Design—Batchelder (Inland Printing Co., Chicago).

Shop-work.

(1.) BENCH WOODWORK.—Application of principles in mechanics carried out in carpentry and joinery. Problems seen in framing a wooden building. Walls and partitions. Roof-framing. Construction of trussed girders and roof-trusses. Methods of calculating strains and stresses. Models constructed to scale. Use of the steel square as a shortcut to geometrical methods.

(*a.*) *Draughting.*—Problems in roofing solved geometrically. Orthographic projection and sections of solids—the ellipse, parabola, and hyperbola.

(*b.*) *Mensuration of Carpentry and Joinery.*—Revise square root. Areas. Graphical solutions. Figures bounded by curved lines, cubic measure.

(*c.*) *Mechanics of Carpentry and Joinery.*—Resultant of two or more forces. Parallelogram of forces. Triangle of forces. Inclined forces on one plane, but not acting through one point. Parallel forces. Loaded beams. Stress diagrams for roof-trusses. Stress and strain. Shearing stresses. Methods of arranging beams. Bending moments. Calculation of the transverse strength of wooden beams. Deflection pulleys. Specific gravity.

Text-books and books of reference:

Modern Framed Structures, Vol. I.—Johnson, Bryan & Turneaure (Wiley).

Carpentry—Griffith (Macmillan).

Carpentry and Joinery—J. W. Wiley (Macmillan).

(2.) SHEET-METAL WORK.—Greater technical skill with the tools should now be demanded and flared articles involving triangulation should be introduced.

During the two previous years projects in tin have been developed and constructed, but in the third year articles may be made in copper and decorated by repoussé or etching.

Text books and books of reference:

Metal Craft—P. Wylie Davidson.

Copper Work—Rose (Manual Arts Press, Peoria).

(3.) FORGING.—More difficult operations than in the second year, but involving the same exercises. Shaping heavier articles, requiring the employment of a striker. Use of such tools as flatter, fuller, and set-hammer. Articles such as grab-hook, tongs, and small hammer-head may be attempted. Welds requiring manipulative skill, such as split weld. Welded ring on welded eye. Straight weld. Three- or four-link chain.

(*a.*) *Tool-making.*—Cold-chisel, cape chisel, punches, etc. Brazing, case hardening. Calculation of time and material in order to obtain cost as in previous years.

(*b.*) *Art Metalwork.*—Additional projects demanding an exercise of taste and refinement should be undertaken. Twisting, scroll-work, spindle shape, spiral, interlacings, leaves and other ornamentations.

Text-books and books of reference:

Art Metalwork with Inexpensive Equipment—Payne (Manual Arts Press).

Practical Forging and Art Smithing—Googerty (Bruce Publ. Co., Milwaukee).

(4.) MACHINE-SHOP.

(*a.*) *Lathe-work.*—Turning various diameters to .002″ limit (micrometer); cutting external and internal threads; boring with boring-bar; forming to template, concave and convex; use of jigs for holding work. Time tests. Indexing methods.

(*b.*) *Shaping.*—Planing surfaces at right angles parallel and to .002″ limit; angular planing; hexagonal planing, use of jig.

(*c.*) *Drilling.*—Drilling holes in thick metal; holes accurated, located, in alignment, and properly spaced.

(*d.*) *Sawing.*—The use of hand and power saw.

(*e.*) *Grinding.*—Grinding and drilling by hand. Grinding chipping-chisels, lathe and planer tools.

(*f.*) *Bench-work.*—Chipping—use of cape and chipping chisel; cutting a keyway and chipping to a line. Fitting—filing and accurately fitting a key. Scraping a surface flat to a master-plate.

(*g.*) *Workshop Drawings.*—Further use of notations and shop standards. Student should be able to make an accurate working drawing calling for all necessary operations, using component reference numbers and title.

(*h.*) *Shop Science.*—Student should be able to set up any simple or compound train on engine lathe; knowledge of functions of any part of lathe or shaper and name the parts; calculation of setover for taper-work; cutting speeds and feeds; principles of tool-grinding for lathe tools, planer tools, and twist drills; heat treatment of metals; the properties and recognition of metals in common use.

(*i.*) *Shop Organization and Methods.*—Limit system of production; standardization; the use of the special machine in rapid production; systems of inspection.

Text-book: Advanced Machine Work—Smith (Industrial Education Book Co., Boston).

HIGH SCHOOL HOUSEHOLD SCIENCE COURSE.

FIRST YEAR.

I. English and History.

READING AND ORTHOEPY.—As prescribed for Grade IX.
WRITING AND SPELLING.—As prescribed for Grade IX.
LITERATURE.—As prescribed for Grade IX.
COMPOSITION.—As prescribed for Grade IX.
HISTORY.—As prescribed for Grade IX.

II. Latin *or* French.

As prescribed for Grade IX.

III. (*a.*) Algebra.

As prescribed for Grade IX.

(*b.*) **Arithmetic and Mensuration.**

As in Dominion High School Arithmetic. General principles of Arithmetic and Mensuration; application to common problems of the arts and trades. Book-keeping, business forms and usages; bills, receipts, cheques, household budgets and accounts; collection of accounts.

HOUSEHOLD PROBLEMS THAT REQUIRE A GIRL'S ATTENTION.

Enough practical measuring and weighing to be able to recognize quantities referred to in avoirdupois, liquids, dry and linear tables.

To change quickly one denomination or one fraction to another.

Capacity of household appliances—hot-water bottles, kettles, pails, baskets, coal-bins, jars, etc.; capacity and areas of rooms.

Wholesale and retail cost of materials; computation of lesson, cost per class, per pupil, etc.

Percentage discounts.

Comparison of cost of different fuels; reading of meters and familiarity with terms.

Insurance—house, life, accident, and industrial.

Comparison of foods; meats and their substitutes; home and factory produced foods.

Problems relating to customs duties; express parcel post; freight.

Household budgets and apportionment of income; keeping household accounts.

Various standard widths of common textiles considered in terms of cost as width varies.

Questions relating to floors, walls, and roofing; covering walls with paint and paper, floors with carpets and linoleums.

City problems—cost of street-cleaning, lighting, etc.

The metric system; weights and measures; standard units; household measurement.

IV. Chemistry and Physics.

(*a.*) Work in Chemical Laboratory.
(*b.*) Work in Cookery Laboratory.
Two periods per week (50 minutes each).

1. WEIGHTS AND MEASURES.—Use of balance and principles of measuring.

2. (*a.*) AIR.—Occupies space, has weight, exerts pressure. The barometer. Readings of and construction. Warm air lighter than cold. Convection in air and water. Heating and refrigeration (convection currents). Ventilation and ventilators. Vacuum, sealing of fruit-jars and mechanical devices to assist same. Vacuum cleaner.

2. (*b.*) AIR.—Its relation to fire, draughts, coal-range or gas-range. Usual impurities—dust, bacteria. The microscope and a very simple history of bacteriology. Bacteria, yeasts, moulds, and sterilization in relation to food preservation. Harmful and harmless preservation of food, wood, metal, etc. Effect of fresh air, sunshine, drying, and cold storage.

3. (*a.*) HEAT.—Effects of heat—changes in size, state, temperature in solids, liquids, gases. The thermometer; boiling and freezing points, variation in boiling-point due to altitude (pressure).

3. (*b.*) Temperatures in moist and dry heat in cooking processes.

4. (*a.*) WATER.—Density and how determined. Buoyancy. Lactometer. Water as a solvent (solids, liquids, gases). Other solvents. Chemical and physical change. Matter held in suspension. Filtering and decanting. Saturation. Crystals and crystallization. Evaporation. Solids in water, rain-water. Condensation. Distillation. Maximum density of water. Freezing. Latent heat of water and steam. Calorie and calorimeter.

4. (*b.*) WATER.—Its relation to cookery, cleanliness, and health.

Laboratory practice to prove theories taught.

V. Physiology (including Hygiene, Child-welfare, and Home-nursing).

Study of the structure and function of the systems of the human body and their relation to one another.

STRUCTURE.—The cell. The digestive, circulatory, and respiratory systems. The proper care of each to maintain a normal condition of health.

FOOD.—Its general composition and how it is used in the body.

As much practical and laboratory work as possible.

VI. Dietetics and Cookery.

MARKETING.—Foodstuffs, sources and preparation; varieties; cost; choice and tests; visit to market, grocery, and meat stores, dairies, and manufactories.

FOODS.—The food essentials. Food value. Weighing and measuring commercial food quantities and reduction to kitchen quantities in order to lead up to providing meals at certain costs.

Practice in the application of the principles of cookery to as wide a range of problems as possible in house quantities.

Personal responsibility in use of equipment, ovens, etc. Fireless cookery.

Canning of fruits, vegetables, meats, etc.

HOME MANAGEMENT.—Care of kitchen, pantry, and equipment. Dining-room, table-setting, decoration, and service.

LAUNDRY-WORK.—General care of kitchen linen.

VII. Needlework—Garment-making and Textiles.

(*a.*) PROJECT: NIGHTDRESS.

Practical Work.—Measures; study of pattern; draughting; cutting; pinning; tracing; basting; machine and hand stitching; rolling hem; joining and sewing on lace.

Thought Content.—Habits of neatness and accuracy; care and use of tools; care and use of machines; comparison between hand and machine stitching.

Materials: Choice of material; cotton or linen; suitability; durability.

Trimmings: Suitability; quantity; width and name; amount required.

Selection of pattern: Qualities of material; washing and laundering.

(*b.*) PROJECT: PRINCESS SLIP.

Practical Work.—Taking measures; cutting from pattern; fitting; tracing; marking and folding hem; simple original design in embroidery; finishing placket.

Thought Content.—Talks on the manufacture of clothing; hygiene in connection with underwear; knowledge of cotton cloth; material suitable for underwear, widths and prices; increase in ability to sew neatly; comparison between factory-made and home-made garments.

(*c.*) PROJECT: LINEN CASES FOR TABLE-LINEN.

Practical Work.—Button-holes; initial embroidery.

Thought Content.—Economy in buying and cutting; study of cotton.

(*d.*) PROJECT: CURTAINS.

Practical Work.—Hemstitching and hanging.

Thought Content.—Production and manufacture.

(*e.*) PROJECT: BED-LINEN FOR HOSPITAL BED.

Practical Work.—Folding and stitching hems and marking linen.

Thought Content.—Care in construction of garments; different ways of finishing off the tops of garments.

(*f.*) PROJECT: TOWELS.

Practical Work.—Folding narrow hems.

Thought Content.—Neat and accurate work; economy of time.

(*g.*) PROJECT: CORSET-COVER OR DRAWERS.

Practical Work.—Cutting from standard pattern; cutting and joining bias strips; placing bands.

Thought Content.—Different ways of joining lace and embroidery; study of cotton fibre; its growth and manufacture.

VIII. Drawing, Design, and Household Art.

Work to be correlated with that of the Sewing and Dressmaking classes, as well as that of the care and decoration of the home.

Consideration to be given to the economic value of beauty and to the development of a reliable taste and appreciation of colour, form, and arrangement.

Text and reference books:

Practical Geometry for Art Students—John Carroll (Burns & Oates, London).
Lessons in Decorative Design—Frank G. Jackson (Chapman & Hall).
Drawing for High Schools—Prang.
Needlecraft in the School—M. Swanson.
Needlework in School—Swanson & McBeth (Longmans, Green & Co.).

IX. Vocal Music.

VOICE-CULTURE.—The voice, its use and preservation; breathing and breathing rules and exercises. Vowels and consonants, their treatment. Rhythm, expression, interpretation, phrasing. Vocal exercises for daily practice for the attainment of agility and evenness of tone. Sight-singing and ear-training. Knowledge and use of the modulator and stave. Songs, two- and three-part. Criticism and appreciation of the work of the great masters.

X. Physical Culture.

SECOND YEAR.

I. English and History.

READING AND ORTHOEPY.—As prescribed for Grade X.
WRITING AND SPELLING.—As prescribed for Grade X.
LITERATURE.—As prescribed for Grade X.
COMPOSITION.—As prescribed for Grade X.
HISTORY.—As prescribed for Grade X.

II. Latin *or* French.

As prescribed for Grade X.

III. (*a.*) Algebra.

As prescribed for Grade X.

(*b.*) Arithmetic and Mensuration.

As in Dominion High School Arithmetic.

Review problems of the first year; metric system; measures and equivalents.

Measurements of temperature, percentage, interest, discount, banking, household accounts, fractions.

IV. Chemistry and Physics.

(*a.*) Work in Chemical Laboratory.

(*b.*) Work in Cookery Laboratory.

Two periods per week (50 minutes each).

(*a.*) Composition of air. Composition of water. Decomposition and combination. Preparation of oxygen and hydrogen. Properties of hydrogen and oxygen. Combustion. Relation to heat. Heat of combustion. Spontaneous combustion. Fuels—solids, liquids, gases. Light and illuminants—gas, acetylene, electric lighting.

Acids and salts, acid salts, alkalies, bases and basic oxides. Reaction of acids with bases and with basic oxides.

Metals, rusts, rust-stains on fabrics.

Ionization, strong and weak acids and bases. Hydrolysis of salts. Hard and soft water and water-supply. Softening of water. Ammonia; the ammonium radicle.

(*b.*) Methods of lightening flour mixtures. Baking-powder and laboratory practice to prove theories taught.

V. Physiology.

Recapitulation of first-year work.

Introduction to First Aid and Home-nursing begun in problems relating directly to the following: Choking, drowning, and common accidents.

Continuation of study of muscular, skeletal, and nervous systems. Excretions.

Simple laboratory-work on the organs of animals.

VI. Dietetics and Cookery.

MARKETING.—Continued as in first year whenever possible.

COOKERY.—Heat measurements. Heat and work. The calorimeter and one hundred caloric portion. Daily requirements—fuel, protein and protective foods considered for muscle-building, energy-furnishing, and body-regulating material.

Meals planned and served to meet above requirements at varying costs. Students as guests. Table decoration and service.

HOME MANAGEMENT.—When no servant possible. Laundry-work—general care of the household linen. Consideration of water, soaps, removal of stains, etc., as taught in the course of Chemistry.

VII. Clothing—Dressmaking, Millinery, and Textiles.

(Students supply their own material subject to the approval of the Instructor.)

(*a.*) PROJECT: FALL OR WINTER HAT.

Practical Work.—Taking measures; making paper patterns; cutting buckram; different stitches used in millinery; cutting and sewing-on of wire; covering, trimming; making folds, ruches, and simple hand trimmings.

Thought Content.—Good lines; good colour combinations; study of lines of face in their relation to lines of hats; good taste in hats; choice of trimming; choice of style; economy in buying and cutting; durability of different kinds of trimming; neat and accurate work; care and use of tools; care of work.

(*b.*) PROJECT: DRAFTING.

Practical Work.—Taking measures; drafting shirtwaist and skirt; developing dress from draft.

Thought Content.—Accuracy in execution; lines and form studied; hygienic nature of dress; appropriateness; necessity of economy in clothing.

(*c.*) PROJECT: SIMPLE WOOLLEN DRESS.

Practical Work.—Sponging; cutting; fitting; stitching; pressing; finishing; application of trimming; braid or embroidery.

Thought Content.—Textile study in relation to choice of materials for dress; adulterations in wool; economy in buying good material; good taste in colour and

design; choice of style; suitability; use of pattern; care in cutting; marking; making; finishing and pressing; neat, accurate work; economy of time and material through wise planning.

(*d.*) PROJECT: COTTON DRESS.

Practical Work.—Made from standard pattern; alterations made if necessary; designing; buying; cutting; fitting; finishing and trimming.

Thought Content.—Texture of material; suitability; durability; amount of goods required; comparison of ready-to-wear and garments made at school or at home; relation of money spent for dress to that of other clothing; ethics of shopping; keeping accounts and cost of wardrobe; wool and woollen fabrics; collection of samples, widths, and prices.

(*e.*) PROJECT: HOUSEHOLD DECORATION—MAKING AND HANGING DRAPERIES.

Practical Work.—Selection of material and trimming; cutting; folding; embroidering bands; hanging.

Thought Content.—Colour scheme for curtains, draperies, and rugs; good designs, suitability and cost; artistic and hygienic draperies.

VIII. Drawing, Design, and Household Art.

Designing and the making of patterns. Embroidery, appliqué, stenciling, etc. Artistic principles involved in the clothing of the person; the proportions of the human form; true use of line, form, texture, colour, harmony, contrast in obtaining effects.

Study of historical styles in dress. Costume-designing.

IX. Vocal Music and Elocution.

MUSIC.—More advanced training than first year, with increased difficulty in part songs, glees, and madrigals.

ELOCUTION.—The elements of elocution. The voice as a musical instrument. The breath; breathing and gesture exercises; nose-breathing; breath-pauses and throat-rests; the breath-sounds of speech; phonation; vocal consonants; vowels; resonance; voice-production exercises; register; flexibility; distinctness; selections for declamation.

Musical and dramatic appreciation; consideration of the work of the great masters.

X. Physical Culture.

THIRD YEAR.

I. English and History.

LITERATURE.—As prescribed for Junior Matriculation.

COMPOSITION.—As prescribed for Junior Matriculation.

HISTORY.—As prescribed for Junior Matriculation.

II. Latin *or* French.

As prescribed for Junior Matriculation.

III. (*a.*) **Algebra.**

As prescribed for Junior Matriculation.

(*b.*) **Arithmetic and Mensuration.**

Problems in measures and equivalents. Measurements of temperature, percentage, interest, discount, banking, household accounts, fractions.

IV. Chemistry and Physics.

(*a.*) Work in Chemical Laboratory.

(*b.*) Work in Cookery Laboratory.

Four periods per week (50 minutes each).

(*a.*) Organic radicles. Hydrocarbons and alcohols. Esters and fats. Hydrolysis of esters. Saponification. Soaps—commercial soaps, foreign ingredients in commer-

cial soaps, special soaps and scouring-powders. Solution and emulsification of fats. The cleaning of fabrics. Chemistry of textiles. Bleaching, bluing, dyeing. The general composition of foods—carbohydrates.

(*b.*) The function of food; the digestion of foods; foods of vegetable origin and of animal origin.

PHYSICS.—Elementary electricity and magnetism. Application to household appliances—lighting, heating, electric toaster, percolator, iron, stove, electric bell. Fuse-plugs. Meter and reading of meter. Telephone. Electric motor. Light—reflection and refraction. Laws of reflection and refraction. Composite nature of white light. The lens and optical instruments.

Laboratory practice to prove theories taught.

V. Physiology (including Hygiene, Child-welfare, and Home-nursing).

FIRST AID.—Common injuries to the muscular and bony system and the skin. Simple bandages and their use.

HOME-NURSING.—The sick-room; bed-making; baths; taking temperatures, pulse and respiration. Symptoms and treatment of common diseases—application of poultices, etc. Invalid diet.

CHILD-WELFARE AND CARE OF THE BABY.—Care of food and dress of the infant and small child. Visits to hospitals.

CONSIDERATION OF THE HOME.—Design, construction, decoration, and care. Work to be correlated to the courses given in Art and Science. The construction of a house, from the standpoints of site, foundation, materials. Convenient and inconvenient arrangement of space. Water-supply and drainage. Finishing and decoration of floors, walls, and ceilings.

Labour-saving equipment for the home.

LAUNDRY-WORK.—From the hygienic standpoint. Visits to commercial laundries. As much practical work as possible.

VI. Dietetics and Cookery.

MARKETING.—As much as possible, visits to markets, stores, factories, etc. Written reports on market.

FOODS.—Costs, fuel value, protein balance, and vitamine content of foods. Criticism of food advertisements, recipes, etc.

Meals planned and served to paying guests. Invalid and children's diets. The lunch-box.

Home management and the duties of servants. Laundry-work carried out in conjunction with the lessons in Chemistry.

As much practical work as possible.

VII. Clothing—Dressmaking, Millinery, and Textiles.

(*a.*) PROJECT: WINTER COAT OR TAILORED CLOTH DRESS OR SUIT.

Practical Work.—Choice of style; choice of material; cutting; marking; tailor basting; fitting; pressing; setting in pockets; finishing seams; shrinking and placing of canvas finishings.

Thought Content.—Selection of material; choice of colour; suitability to wearer; suitability to other dress; general utility coat; simplicity in style emphasized and care in buying; texture and durability to be considered; comparison to be made with ready-to-wear coats; good lines and careful, neat finishings; adjustment of sleeves, collars, and linings.

(*b.*) PROJECT: DRAFTING.

Practical Work.—Measurements and drafting of tight-fitting waist.

Thought Content.—Proportions of human figure; lines of draft; fitting, where and how; appearance of properly fitted garment; economy of time; economy of buying and cutting.

(*c.*) PROJECT: SPRING OR SUMMER HAT.

Practical Work.—Making wire frame, use of tie-wire; shaping hat; covering; sewing braids; covering with lace or net; making bows, flowers, etc.; renovating silk, ribbon, or velvet.

Thought Content.—Choice of design, colour, and trimming; harmonizing with the dresses to be worn; straws or braids, their prices and wearing qualities; effect of sun on the hat; simplicity; power to do original thinking and planning in reference to trimming.

(*d.*) PROJECT: SIMPLE EVENING DRESS.

Practical Work.—Buying; cutting; drafting; fitting; making; finishing.

Thought Content.—Economy in dress; economy in buying; economy in time, in planning of work; simplicity; good lines; beautiful colour combination and suitability to wearer; healthful, comfortable clothing; care of clothing; cleansing of silk and woollen goods; study of silk fibre; samples of different kinds, widths, and prices; personal budget; cost of High School girl's wardrobe for three years.

(*e.*) PROJECT: BABY'S DRESS OR SLIP.

Practical Work.—Cutting; fitting; making; finishing.

Thought Content.—Use of patterns; construction of garments; hygienic qualities and suitability; cost of child's wardrobe; good lines and careful, neat finishings denote the beauty of dress.

VIII. Drawing, Design, and Household Art.

Designing and the making of patterns.

Work of the second year amplified.

IX. Vocal Music and Elocution (Voice Exercises).

MUSIC.—Solos, part-songs, glees, madrigals.

ELOCUTION.—Development of ease, freedom, and distinctness in articulation; flexibility of the organs of speech; creative processes as opposed to imitative methods; stimulation as opposed to coaching; literary appreciation *versus* technical analysis.

Musical and dramatic appreciation; consideration of the work of the great masters.

X. Physical Culture.

TEXT-BOOKS AND BOOKS OF REFERENCE.

Cookery.

The Canadian Cook Book—Pattinson (The Ryerson Press, Toronto).

Elements of Cookery—Williams & Fisher (The Macmillan Co., Ltd., New York).

A Text-Book of Domestic Science for High Schools—Matilda G. Campbell (The Macmillan Co., New York).

The Boston Cooking School Cook Book—F. M. Farmer (Little, Brown & Co., Boston).

Food.

Food and Dietetics—Hutchison (Arnold, London).

Food—What it is and Does—Edith Greer (Ginn & Co., Boston).

Food and Feeding—Sir Henry Thompson (F. Warne & Co., London).

Diet in Relation to Age and Activity—Sir Henry Thompson (F. Warne & Co., London).

The Laws of Life and Health—Alex Bryce, M.D. (Melrose, London).

Food and Its Functions—Knight (Blackie & Sons, London).

Food Study—Wellman (Little, Brown & Co., Boston).

Hygiene.

Practical Domestic Hygiene—J. Lane Notter, M.A. (Longmans, Green & Co., London).

Personal Hygiene—Pyle (W. B. Saunders, 925 Walnut Street, Philadelphia).

House and Community Hygiene—Broadhurst (Lippincott, Philadelphia).
The Newer Knowledge of Nutrition—McCollum (The Macmillan Co., New York).

Dressmaking.

Clothing for Women—Baldt (J. B. Lippincott Co., Philadelphia).
French Pattern Modelling for Professionals—Amy J. Reeve (Longmans, Green & Co., London).

Textiles.

Textiles—Wm. H. Dooley (D. C. Health & Co.).
Cotton & Linen—Thompson (Ronald Press Co., New York).
Silk—Thompson (Ronald Press Co., New York).
Millinery—Aiken (Ronald Press Co., New York).
Clothing—Choice, Care, Cost—Woolman (Lippincott & Co., Philadelhpia).

Science.

The Chemistry of Housecraft—Hall and Grunbaum (Blackie & Sons, London).
The Science of Common Life—Coppock (Allan & Co., London).
Elementary Household Chemistry—Snell (The Macmillan Co., New York).
Chemistry of Food and Nutrition—Sherman (The Macmillan Co., New York).
General Science—Caldwell & Eikenberry (Ginn & Co.).

Housewifery.

Balderson (J. B. Lippincott Co., Philadelphia).

Laundering.

Conservation of Textiles—Elledge and Wakefield (Laundry Owners National Association, La Salle, Ill.).

Dyeing and Cleaning.

Course of Instruction in Dyeing and Cleaning by Association of Dyers and Cleaners (Merchants Laclede Building, Saint Louis, Mo.). Price, $2.25.

Miscellaneous.

Household Engineering — Frederick (American School of Home Economics, Chicago).
Bacteria, Yeasts, and Molds in the Home—Conn (Ginn & Co., Boston).
Physics of the Household—Lynde (The Macmillan Co. of Canada, Ltd., Toronto).
A Laboratory Course in Physics of the Household—Lynde (The Macmillan Co. of Canada, Ltd., Toronto).
First Aid to the Injured—Dr. J. Cantlie (St. John Ambulance Association, Castle Building, Queen Street, Ottawa).
Hints and Helps on Home Nursing—Cosgrave (St. John Ambulance Association, Castle Building, Queen Street, Ottawa).
Essentials of Health—Stowell.
The Care and Feeding of Children—Holt (Appleton, New York).
Practical Nursing—Pyle.
Good Housekeeping Magazine.
Home Economics Journal.
Anatomy and Physiology—Kimber (The Macmillan Co., New York).
The Business of the Household—Taber (Lippincott, Philadelphia).
Successful Family Life on the Moderate Income—(Abel Lippincott, Philadelphia).
The Furnishing of a Modest Home—Daniels (Atkins or Mentzer & Groves, New York).

HIGH SCHOOL MANUAL TRAINING SYLLABUS.

Where a Course in Manual Training is given in a High School, the attendance of boys is compulsory.

First and Second Years' Woodwork (where there is not provision for Metalwork), or a combined course of wood and other material.

A scheme of work to be submitted approaching the technical side of the subject based on the exercises taken in the Elementary School Course, but including larger and more complicated models, some of which might be class-work.

Wood-turning to be introduced. Grinding and sharpening of bench and lathe tools.

Metalwork.

A scheme of work to be submitted, based on the following:—

Models to be made, embracing—

(*a.*) Soldering.
(*b.*) Brazing.
(*c.*) Etching in copper, copper modelling, or kindred artistic treatment of metals.
(*d.*) Forge-work.
(*e.*) Bent-iron work.
(*f.*) Chipping and filling.
(*g.*) Turning.

Text-books and Books of Reference for Manual Training Teachers.

Teaching Manual and Industrial Arts—Ira S. Griffith. Price, $2.
Essentials of Manual Training—Ira S. Griffith. Price, $1.25.
Furniture Making—Ira S. Griffith. Price, $1.25.
Problems in Furniture Making—Fred. D. Crawshaw.
Problems in Wood Turning—Fred. D. Crawshaw. Price, 64c.
Problems in Farm Wood Working—S. A. Blackburn. Price, $2.
Publisher, Manual Arts Press, Peoria.
Native Trees of Canada—Bulletin No. 61, Forestry Branch, Ottawa.
Elementary Forge Practice—Harcourt. Price, $1.50.
Elementary Machine Shop Practice—Palmateer. Price, $1.50.
Farm Blacksmithing—Friese. Price, $1.35.

DOMESTIC SCIENCE FOR HIGH SCHOOLS.

Where a Domestic Science Centre is established at a High School, attendance is compulsory on the part of the girls of the school.

FIRST YEAR.

Dietetics, Cookery, and Table Service (Practical and Theoretical).

The science of nutrition, physical and chemical changes in matter. Chemical formulæ and equations. Air and combustion. Heat and cooking. Discussion of gas, coal, electricity. Paper-bag and fireless cookery. Classification of foods—carbohydrates, fats, protein. Inorganic food—water, mineral matter. Food preservation. Bread-making. Invalid cookery. Home nursing and hygiene. Table service.

Work to be correlated to general science. Air and ventilation. Barometer, thermometer, graphic readings, expansion of gases, etc.

Physiology.

The systems of the body and their functions. First aid to the injured.

Needlework.

Draughting and making underclothing. Estimating costs. Textiles relating to underclothing. History of their manufacture and development.

SECOND YEAR.

Dietetics and Cookery (Practical and Theoretical).

Heat measurements. Heat and work. The calorimeter. Daily requirements as regards muscle-building. Energy-furnishing and body-regulator materials.

Balancing, occupation, climate, sex, age, etc., considered. Children's diets and special normal diets considered. Meals planned and worked out to meet requirements in food values, at varying costs.

Serving meals as worked out in dietary study. Work to be correlated to High School General Science (Chemistry and Physics).

Physiology.

Home nursing and home hygiene. Recapitulation of first aid to the injured.

Needlework.

Cotton skirts. Middies. Smocks and outergarments. Household linen and furnishing. Estimated costs. Textiles relating thereto.

THIRD YEAR.

Dietetics and Cookery (Practical and Theoretical).

Revise work of the second year.

Food and its functions. Digestion of foods, foods of vegetable origin and animal origin. Meals planned and worked out to meet requirements in food values at varying costs.

All work to be correlated to High School General Science (Chemistry and Physics).

Household Chemistry.

Organic radicles, hydrocarbons, and alcohol; esters and fats, hydrolysis of esters; saponification; soaps—commercial soaps, foreign ingredients in commercial soaps, special soaps, and scouring powders. Solution and emulsification of fats. The cleaning of fabrics, chemistry of textiles, bleaching, bluing, and dyeing.

Household Physics.

Heat capacity, specific heat, latent heat; application of latent heat; refrigeration; freezing mixtures; artificial-ice machines; steam heating; steam cookers; distillation; evaporation; dew-point; boiling-point; why clothes dry; causes of cloud; rain, snow, and dew; changes in boiling-point.

Electricity in the home; household electrical appliances; electric bulbs; magnetism and electromagnet; the electric motor in the home; electric heating; cooking and lighting appliances; electric iron, coffee percolator, oven, etc.; the incandescent lamp. Electrical terms and measures; the ampere, ohm, volt, watt.

Light in the home; arrangement of lighting fixtures in the home; intensity of illumination; nature of light.

Reflection and refraction of light; laws of reflection; laws of refraction; lenses and optical instruments.

Colour: Composite nature of white light; the rainbow; theory of colour vision; pigments.

Sound: How sound is produced; nature of sound-waves; noises and musical sounds; pitch, music, and musical instruments.

Physiology.

Recapitulation of previous year's work in home nursing, home hygiene, and first aid to the injured.

Needlework.

Draughting, cutting, and making up dresses, etc. Millinery. Estimating costs. Textiles relating to personal wear. The personal budget. History of costume.

NOTE.—For list of books of reference *see* pages 62 and 63.

EXAMINATION AND PROMOTION OF PUPILS.

High Schools.

The principals of all High Schools shall hold promotion examinations at the end of the school-year or during the school-year, or at both times. These examinations should take the form of either oral or written tests. The promotion lists should, however, be largely determined by the assistant teachers who have taught the pupils.

Pupils who fail to do well in part of their examinations should not be required to repeat the year's work in those subjects in which they have shown a marked degree of proficiency, but should be allowed to proceed to the next year's work in such subjects.

Towards the end of June each year the Department will conduct examinations for promotion from Grade IX. to Grade X. and from Grade X. to Grade XI. These examinations are obligatory in the case of pupils attending Superior Schools, but not in the case of pupils attending High Schools. Private School pupils who pass the Departmental Examinations for Grade IX. may enter Grade X. of a High School and those who are successful in the Departmental Grade X. Examinations will be admitted to Grade XI.

Written examinations will also be given by the Department on the following courses: Junior Matriculation, including Normal Entrance, Senior Matriculation, Third-year Commercial, Third-year Household Science, and Third-year Technical. Examination time-tables will be forwarded to each examination centre early in June.

In the High School Examinations candidates to be successful must make at least 40 per cent. on each paper and not less than an average of 50 per cent. on all papers.

Fees for High School examinations are as follows:—

For Grade IX. and Grade X. examinations	$5 00
For all other examinations	5 00
For a supplemental examination, per paper	2 00
For a supplemental examination, for three or more papers	5 00

Fees are to be forwarded to the Registrar of the Department at least one month before the commencement of the examination.

TEACHERS' CERTIFICATES.

1. Academic Certificate (Interim and Permanent), entitling the holder to teach in an Elementary School or in a High School.

Qualifications—

(*a.*) A Degree in Arts, in Science, or in Literature of recognized British, Canadian, or Colonial Universities.

(*b.*) A Diploma in Education of the University of British Columbia or of a Training College approved by the Council of Public Instruction.

2. First-class Certificate (Interim and Permanent), entitling the holder to teach in an Elementary School or in a Superior School.

Qualifications—

(*a.*) A Senior Matriculation Certificate for this Province or its equivalent.

(*b.*) A Diploma of the Provincial Normal School, or of other Normal School or Training College approved by the Council of Public Instruction.

3. Second-class Certificate (Interim and Permanent), entitling the holder to teach in an Elementary School.

Qualifications—

(*a.*) A British Columbia Grade XI. (Normal Entrance) Certificate, or its equivalent, or Third-year Household Science Certificate.

(*b.*) A Diploma of the Provincial Normal School, or of other Normal School or Training College approved by the Council of Public Instruction.

4. Third-class Certificate, entitling the holder to teach in an ungraded Elementary School or to fill the position of assistant in any graded Elementary School. (Certificates of this grade are no longer issued by the Department.)

5. Temporary Certificate, valid until the end of the school-year in which it is issued, entitling the holder to teach temporarily in any school.

6. High School Commercial Teachers' Certificates.

A. High School Assistant Commercial Teacher's Certificate (Temporary).

Candidates who hold an Academic Certificate or a First-class Teacher's Certificate for this Province, or its equivalent, and who have passed the examination set by the Department of Education on the subjects specified hereunder, will be granted a High School Assistant Commercial Teacher's Certificate (Temporary).

(*a.*) Stenography (Theory):

The principles of the Isaac Pitman system as covered by the main text-book of that system, The Phonographic Instructor (Isaac Pitman & Co., New York).

(*b.*) Stenography (Practical):

The writing from dictation at a speed of not less than *eighty* words per minute from matter having a syllabic intensity of 1.5 with typewritten transcript at a rate of not less than twelve words per minute.

(*c.*) Typewriting (Theory and Practice):

The mechanism and manipulation of the standard machines, with ability to write at a rate of *forty* words per minute for at least ten minutes from standard test material.

(*d.*) Book-keeping (Theory)—Single and Doube Entry:

General merchandising, commission and manufacturing businesses; single proprietorship, partnership, and corporation accounts; changing the form of ownership; plant, labour, material, and department accounts; costs accounting as far as covered

in say 20th Century Book-keeping; treatment of bank, discount, freight, bad debts, depreciation, and similar accounts; columnar journals; self-balancing ledgers; various forms for various businesses; manufacturing, trading, profit and loss accounts, and balance sheets; statements of income and expenditures, receipts and disbursements; savings and current accounts; collection and exchange; statements of banks and other corporations.

Text-books covering syllabus: Accounting, Theory and Practice—Lisle (Wm. Green & Sons, London, Eng.); Joint Stock Book-keeping—Hoskins; and Canadian Modern Accounting—Sprott (Commercial Text Book Co., Toronto).

(*e.*) **Book-keeping (Practice):**

Making proper records and financial statements from given data; single proprietor, partnership, and corporation accounting.

Text-book: 20th Century Book-keeping (South-Western Publishing Co., Cincinnati, Ohio).

(*f.*) **Business Practice and Statute Law:**

(1.) Business papers, receipts, releases, promissory notes, chattel and lien notes, draft bills of exchange, orders, due bills deposit slips, cheques, bank pass-books, bills, invoices, bank drafts, draft requisitions, deposit receipts, credit notes, accounts, monthly statements, warehouse receipts, bills of lading, freight bills, debentures, leases, instalment scripts, stock certificates, stock transfers. Bills of Exchange Act and Dominion Companies Act (King's Printer, Ottawa); B.C. Joint-stock Companies Act (King's Printer, Victoria).

(2.) Business Law: Negotiable paper, endorsement, acceptance, discharge, dishonour, protest, negotiability and assignability, accommodation papers; statutes of limitations and frauds; interest; legal tender, payments, collections; laws of partnership and companies; insurance; liability of partnership, shareholders, directors, agents, endorsers; contracts; property; mortgages; guarantee and suretyships; shippers and carriers; mechanic's lien; principal and agent; master and servant; landlord and tenant; wills and succession; copyrights, trade-marks, and patent rights.

Text-book covering syllabus: Digest of Canadian Mercantile Law (W. H. Anger, Law Book Publisher, Toronto).

(*g.*) **Penmanship (Theory and Practice):**

Theory and practice of penmanship; position and movement; principles of letter formation; graceful, legible business writing, ledger heading, figures, marking.

Text-book covering syllabus: Commercial Edition of the MacLean Method of Muscular Movement Writing.

(*h.*) **Arithmetic of Commerce and Finance:**

Interest, discount, commission, duties and customs, stocks and investments, partnership settlements, partial payments, equating or averaging accounts, compound interest, exchange, practical measurements, the metric system; compound interest, annuities certain, sinking funds and depreciation, formation of interest and annuity tables, the application of logarithms, and the valuation of bonds.

Text-books covering syllabus: Dominion High School Arithmetic (Gage & Co., Toronto); New Method Arithmetic (Commercial Text Book Co., Toronto); Theory of Finance—King; Interest and Bond Value—McKenzie (Toronto University Press).

(*i.*) **Economics and Economic Geography:**

Principles of production, distribution, and exchange; economic theories of value, rent, wages, profits and interest; land, labour, and capital; industrial combinations, extent, dangers, and advantages; socialism.

National and local finance; public debts, methods of extinction and conversion; sinking funds; public domain—lands, forests, minerals; principles of taxation.

Physical geography in its economic relation to the natural resources of the chief countries; the raw material of commerce—foodstuffs, textile fabrics, building material or materials for use in the arts.

Text-books: Industrial & Commercial Geography—J. Russell Smith (Henry Holt & Co., 34 W. 33rd St., New York); Outline of Economics—Ely (Macmillan & Co., New York).

B. COMMERCIAL SPECIALIST'S CERTIFICATE (PERMANENT).

Candidates who hold High School Assistant Commercial Teachers' Certificates and pass the examinations set by the Department on any *four* of the subjects specified hereunder will be granted a Commercial Specialist's Certificate for this Province.

(*a.*) **Auditing:**

Object, scope, and advantages of an audit; preliminary steps; instructions to the book-keeper before an audit; continuous and complete audits; vouchers; trial balance and balanced books; individual partnership and company ownership methods of accounting; different classes of audits, as commercial, mining, financial; valuation and verification of assets and liabilities; depreciation, discounts, bad and doubtful debts, reserve fund, etc.; preliminary expenses, directors' fees, etc.; foreign exchange; nature of profits; forms of accounts and balance sheets; auditors' reports, recommendations, and certificates.

Text-book covering syllabus: Auditing: Theory and Practice—Montgomery (The Ronald Press, New York).

(*b.*) **Business Finance:**

Theory of money, its history and functions; credit; mechanism of exchange, nature and function of banks, management of reserves, note issue, redemption fund, leading banking systems of the world, especially those of Canada and the United States; clearing houses, savings banks, trust and loan companies; balance of trade, meaning and effect on exchange; the provisions of the Bank Act, the Currency Act, and the Dominion Notes Act (King's Printer, Ottawa).

Text-books covering syllabus: Money and the Mechanism of Exchange—Jevons; Money and Banking—Scott (Henry Holt & Co., 34 W. 33rd St., New York); Elements of Foreign Exchange—Escher.

(*c.*) **Office Practice and Organization:**

The principles of office administration, location, lay-out, and equipment; methodizing the means of communication, control of correspondence, the work of business departments, training and developing office workers, wages and incentives to efficiency.

Text-book: Management—Lee Galloway (The Ronald Press, New York).

(*d.*) **History of Commerce and Industry:**

Ancient and mediæval commerce; the influence of Venice; the Crusades; the mediæval guilds and their relation to modern trade unions; commercial significance of the great geographical discoveries of the fifteenth century; the Dutch commercial ascendancy; struggle of the English, French, and Dutch for the first place in commerce; the English industrial revolution; commercial significance of the Napoleonic wars; England's industrial and commercial supremacy; French industry and commerce since the overthrow of Napoleon; the German Empire and its commercial position; recent economic growth of Russia; the Balkan States; and the commercial position of South America, Africa, Asia (especially the influence and growth of the Japanese and Chinese nations), and Oceania.

Text-book: History of Commerce—Clive Day (Longmans, Green & Co., New York).

(*e.*) **Commercial Correspondence and Filing:**

The various kinds of commercial letters, including circular letters, form letters, booklets and catalogue planning, follow-up systems, etc.; office routine and secretarial work.

Vertical filing—numerical, geographical, subject, direct name, and follow-up systems, card record systems, document and check filing; the card ledger and stock-keeping systems.

(*f.*) **Commercial French or Spanish:**

Commercial correspondence, invoices, bills of exchange, bills of lading, commercial papers, and commercial terms.

(*g.*) **Shorthand:**

A speed of *one hundred and twenty* words per minute from matter having an intensity of 1.5 words per minute.

(*h.*) **Typewriting:**

A speed of *sixty* words per minute from standard test material.

(*i.*) **Two Years' Approved Business Experience.**

N.B.—Examinations in commercial subjects for Teachers' Certificates will be held either at the close of the Summer School session of the University of British Columbia or at such time as may be determined by the Department of Education.

A candidate will be granted a certificate of credit on any subject of the syllabus when he meets the requirements of the Department in that subject.

7. Domestic Science Teachers' Certificates.

Every Instructor in Domestic Science must hold a British Columbia Instructor's Certificate of Qualification. Each applicant for this certificate must have had approved training and must hold a diploma from the training class for Domestic Science teachers in British Columbia, or from one of the recognized training colleges in Canada, the United States, or the United Kingdom; and also hold a Public School Teacher's Certificate or have had other approved professional standing.

8. Manual Training Teachers' Certificates.

Every Instructor in Manual Training must hold a British Columbia Instructor's Certificate of Qualification.

The following Instructors' Certificates are granted by the Department of Education:—

(*a.*) Interim Certificate, valid until June 30th next after date of issuance.

(*b.*) Permanent Certificate to teach in Elementary Schools.

(*c.*) Permanent Certificate to teach in High Schools.

Every applicant for an Interim Certificate must have had approved experience in manual work and hold a Public School Teacher's Certificate or have had other approved professional training.

Every applicant for a Permanent Certificate to teach in Elementary Schools must hold a First-class Manual Training Certificate and must hold a Public School Teacher's Certificate or have had other approved professional training. Every applicant for a Permanent Certificate to teach Manual Training in High Schools must possess the British Columbia Manual Training Teacher's Certificate and hold a Public School Teacher's Certificate or have had other approved professional training.

Certificates from institutes similar to the following will be recognized for the Permanent Certificate to teach in Elementary Schools:—

Swedish Diploma (Nääs).

German Diploma (Leipsic).

City and Guilds of London Institute (England).

Guelph College (Ontario).

Macdonald College (Quebec).

Further practical tests will be required from holders of such certificates who desire the British Columbia Diploma qualifying them to teach in High Schools.

A training class is conducted by the Department of Education for men who desire to become Manual Instructors in Elementary Schools and who wish to obtain the Elementary School Teacher's Manual Training Certificate.

SYNOPSIS OF HOURS.

Craftsmen.	Hours.	Public School Teachers.	Hours.
A.—1. *General Education or proof of accomplishment*	200	A.—2. Proof of Training and successful teaching experience	275
B.—1. Craftsmanship or proof of same		B.—2.	
C.—1. Bench-work Course in Manual Training—Woodwork	75	C.—2. Bench-work Course in Manual Training—Woodwork	
D.—1. Drawing—			
Lettering	120	D.	120
Plane Geometry			
Solid Geometry			
Developments			
Design			
Blackboard			
E.—1. Theory—			
Education—General	60	E.—2. Manual Training Teaching	60
Manual Training		Methods	
Teaching Methods		Management	
Manual Training		Tools and apparatus	
Class-management			
F.—Lighter Forms of Hand-work	60	F.	60
G.—Manual Training Practice	60	G.	60
Complete three years' course in Manual Training, projects to be drawn and made	200		200
	775		775

REQUIREMENTS FOR A MANUAL TRAINING TEACHER'S CERTIFICATE TO TEACH IN HIGH SCHOOLS OF BRITISH COLUMBIA.

1. Furniture-making: } Use and care of wood-working machinery.
2. Wood-turning: }
3. Sheet-metal hand-work: } Science relating to wood and metal work.
4. Art-metal work: }
5. Elementary machine-shop practice—Bench-work: }
6. Design: Art relating to wood and metal work.

Each of above units will embrace the following divisions: (*a*) Drawing; (*b*) practical work; (*c*) technical theory.

7. Educational methods and class-management.
8. Course of work for 1, 2, 3, 4, and 5.
9. Thesis on the subject of Manual Training.

9. Technical Teachers' Certificates.

Every Instructor in a Technical School must hold a Technical Teacher's Certificate, or a certificate permitting him to teach special subjects.

Applicants, before passing the necessary tests in subject units, will be obliged to pass an examination in English, Mathematics, and Drawing.

SUBJECT UNITS FOR TECHNICAL TEACHER'S CERTIFICATE—METALWORK.

1. Sheet-metal work: } Science relating to metalwork.
2. Art-metal work: }
3. Forging: }
4. Design: Art relating to metalwork.

Each of the above units 1, 2, and 3 will embrace the following divisions: (*a*) Drawing; (*b*) practical work; (*c*) technical theory; (*d*) time-tests.

5. Course of work for 1, 2, 3, and 4.
6. Thesis on the subject of Technical Education and Vocational Training.
7. Theory of education and problems of class-management.

SUBJECT UNITS FOR TECHNICAL TEACHER'S CERTIFICATE—SCIENCE AND ENGINEERING.

1. Magnetism and electricity.
2. Principles and practice of the gasolene-engine.
3. Mechanics.

Each of above units 1, 2, and 3 will embrace the following: (*a.*) Diagrammatic sketching and illustration; (*b*) practical work; (*c*) technical theory and mathematics; (*d*) time-tests.

4. Course of work in 1, 2, and 3.
5. Thesis on the subject of Technical Education and Vocational Training.
6. Theory of education and problems of class-management.

SUBJECT UNITS FOR TECHNICAL TEACHER'S CERTIFICATE—SCIENCE AND BUILDING CONSTRUCTION.

1. Carpentry and joinery.
2. Building construction.
3. Mechanics.

Each of the above units 1, 2, and 3 will embrace the following: (*a*) Draughting; (*b*) practical work; (*c*) technical theory and mathematics; (*d*) time-tests.

4. Course of work in 1, 2, and 3.
5. Thesis on the subject of Technical Education and Vocational Training.
6. Theory of education and problems of class-management.

SUBJECT UNITS FOR TECHNICAL TEACHER'S CERTIFICATE—SCIENCE AND MACHINE-SHOP PRACTICE.

1. Machine-shop practice.
2. Mechanics.

Each of the above units 1 and 2 will embrace the following: (*a*) Draughting; (*b*) practical work; (*c*) technical theory and mathematics; (*d*) time-tests.

3. Course of work in 1 and 2.
4. Thesis on the subject of Technical Education and Vocational Training.
5. Theory of education and problems of class-management.

10. Art Teachers and Supervisors.

Every Instructor must hold a British Columbia Instructor's Certificate, Grade A or Grade B.

Qualifications for Grade A Certificate—

(*a.*) A Public School Teacher's Certificate or other approved professional training.

(*b.*) An Art Master's Certificate of Great Britain or its equivalent from any institution recognized by the Department of Education.

Qualifications for Grade B Certificate—

(*a.*) A Public School Teacher's Certificate or other approved professional training.

(*b.*) An Art Teacher's Certificate of Great Britain or its equivalent from any institution recognized by the Department of Education.

11. Music Teachers and Supervisors.

Every Instructor in Music must hold a British Columbia Instructor's Certificate of Qualification. This certificate will be granted to applicants who have the following qualifications:—

(*a.*) A Public School Teacher's Certificate or other approved professional training.

(*b.*) A satisfactory diploma from a recognized training college in Canada, the United States, or Great Britain.

12. Teachers of Agriculture.

A university graduate in the Science of Agriculture who is the holder of a Provincial Normal School Diploma or has received other approved professional training will be granted a special certificate entitling him to teach Agriculture and other science subjects in a High School.

Every application for a certificate must be accompanied with the usual fee of $5 and a satisfactory testimonial of recent date certifying to the good moral character of the applicant.

All applicants for Teachers' Certificates must be at least eighteen years of age. A registration fee of $5 must be forwarded with the application for a certificate.

FORM OF APPLICATION FOR TEACHER'S CERTIFICATE.

(Post-office Address.)
(Date.)

SIR:

Being of the full age of eighteen years, I hereby make application for a British Columbia First (*or as the case may be*) Class Teacher's Certificate.

I enclose herewith certificate of moral character and fee of $5, and under separate cover am forwarding to your address my High School and Normal School Certificates.

I am,
Yours truly,

.....
(Name in full.)

To the Superintendent of Education,
Victoria, B.C.

PROVINCIAL NORMAL SCHOOLS.

Location and Establishment.

Provincial Normal Schools are situated in Vancouver and Victoria. The Normal School in Vancouver was established in 1901, and that in Victoria in 1915.

Attendance at Normal School.

In the matter of attendance the Province is divided into two districts. Every student whose home is east of Yale or whose home is on Vancouver Island shall attend the Provincial Normal School at Victoria. Students from other parts of the Province shall attend the Provincial Normal School at Vancouver.

Admission.

Candidates for admission to the Provincial Normal Schools are required to hold a Normal Entrance Certificate for this Province or its equivalent.

Each applicant for admission is required to pass a medical examination by an officer appointed by the Department of Education before being finally accepted.

Application for admission must be made on a form obtained from the Principal. This form must be filled in and returned to the Principal at least ten days before the commencement of the session, and must be accompanied by a satisfactory certificate of good character dated within three months of the time of application.

Length of Session.

The session has a continuous duration of thirty-six school weeks. It commences in September on the Tuesday after Labour Day and extends till the last Friday in May.

The holidays during the session, the Christmas and the Easter vacations are the same as provided by the Rules and Regulations of the Council of Public Instruction for the schools of the Province.

Fees and Travelling Expenses.

The sessional fees are as follows:—

First term (payable to the Principal before enrolment in September)	$20 00
Second term (payable to the Principal before enrolment in January)	20 00

Travelling expenses of students at the Normal Schools, calculated at the rate of 5 cents per mile to and from the institution, will be paid to them by the Superintendent of Education at the completion of the session on the certificate of attendance and mileage signed by the Principal.

Management.

1. The Regulations of the Education Department shall apply to the teaching staff of the Normal School, subject to any changes that may be made by the Council of Public Instruction from time to time.

2. The Principal of the Normal School shall be responsible for the discipline and management of the students. He shall prescribe the duties of the staff, subject to the approval of the Council of Public Instruction. The staff shall carry out the instructions of the Principal with regard to discipline, management, methods of study, and all matters affecting the efficiency of the Normal School and the progress of the students.

3. The Principal of the Normal School shall have supervision over the methods employed in the Model School in teaching the course of study prescribed by the Education Department.

4. Students shall attend regularly and punctually throughout the session and shall submit to such discipline and direction as may be prescribed by the Principal.

5. Students shall take all examinations prescribed by the Principal. Such examinations will be conducted by the staff of the Normal School. The examiners shall have power to reject any candidate who shows deficiency in scholarship.

6. The students of the Normal School shall be required to supply themselves with a complete set of the books authorized for use in the Public Schools of the Province in addition to the special text-books prescribed for use in the Normal School.

7. No student shall lodge or board at any house disapproved of by the Principal.

8. If, in the judgment of the Faculty of Instructors, the capacity, attainments, or progress of any student are not such as to warrant his or her longer attendance at the Provincial Normal School; or if in their judgment the manners, habits, temperament, sentiment, or character of the student are not such as to fit him or her to have charge of children, it shall be the duty of the Principal to report such judgment to the Superintendent of Education, who, on being satisfied of its correctness, may require such student to withdraw from the institution.

Standards for Awarding Diplomas.

Diplomas are not awarded solely upon the ability of those in training to pass written examinations, although they may be required to satisfy any such tests from time to time. Each member of the Faculty shall observe closely and record the general behaviour, attitude, attendance, scholarship, progress, and aptitude of each teacher-in-training. An accurate record shall be kept of criticisms made by the Normal School staff and by teachers of the affiliated Public Schools on lessons taught by those in training.

Upon all these standards the Faculty of the Normal School shall base its recommendations to the Department of Education for the awarding of diplomas.

NOTE.—A more complete syllabus of Regulations and Courses of Study for the Normal Schools of the Province is issued in pamphlet form.

TEACHER TRAINING COURSE FOR UNIVERSITY GRADUATES.

University graduates who wish to obtain Academic Certificates which entitle the holders to teach in an Elementary School or High School are now required to complete successfully a Teacher Training Course of about thirty weeks' duration. This course, established in September, 1923, is being conducted by the University of British Columbia, Vancouver.

Courses on methods in the subjects of the curricula of the elementary and high schools are given, and facilities provided for practice teaching in the schools of Vancouver.

The Course.

(*a.*) First Term.—Concurrent with the first term of the University year (September 23rd to December 18th, 1924).

During this term the Methods Courses in elementary school subjects will be given under the supervision of the University. Observation assignments and practice teaching in the elementary school are required.

Texts and references will be announced at the beginning of the term.

(*b.*) Second Term.—Concurrent with the second term of the University year (January 5th to April 14th, 1925).

The Methods Courses given during this term by members of the University staff are confined to the high-school subjects. Candidates will be permitted to register for professional instruction (including observation assignments and practice teaching in the high school) only in those subjects which they are qualified to teach by reason of their previous academic preparation. Methods Courses in three subjects are obligatory.

Texts and references will be announced at the beginning of the term.

(*c.*) Obligatory Subjects.—Required of all candidates for the Academic Certificate.

(1.) *Educational Psychology.*—Two hours a week. Both terms.

(2.) *History and Principles of Education.*—Two hours a week. Both terms.

(3.) *School Administration and Law.*—One hour a week. Both terms.

Texts and references in the above courses will be announced at the beginning of the first term.

(*d.*) Observation Assignments and Practice Teaching.—Approximately 100 hours—40 hours in the elementary school and 60 hours in the high school.

Registration and Fee.

Documentary evidence of graduation in Arts or Science from a recognized British, Canadian, or Colonial University must be submitted to the University Registrar by all candidates other than graduates of the University of British Columbia. All correspondence in connection with the Teacher Training Course should be addressed to the University Registrar, from whom registration cards may be procured.

The fee for the course is $40, payable in two instalments of $20 each, at the Office of the Bursar, The University of British Columbia.

University Privileges and Discipline.

All students registered in the Teacher Training Course at the University are entitled to the privileges accorded to students in the various Faculties, and are also subject to the regulations of the University regarding discipline and attendance at lectures.

Certificate and Diploma.

At the close of the session successful candidates will be recommended to the Provincial Department of Education for the Academic Certificate and to the Faculty of Arts and Science for the granting of the University Diploma in Education.

NIGHT-SCHOOLS.

(*See* SECTIONS 29, 139, 151, "PUBLIC SCHOOLS ACT.")

A portion of the instruction provided in any school district may, if deemed desirable by the Board of School Trustees, be through the medium of night-schools, subject to the following regulations:—

1. Night-schools are public schools under the immediate charge of the Board of School Trustees, just as are the day-schools, except that the sessions are held at night. No night-schools shall be started by a School Board, however, without the approval of the Council of Public Instruction, nor where they will directly or indirectly interfere with the efficient administration of the day-schools. The regulations for the government of day-schools shall, as far as possible, apply to night-schools established under sections 29, 139, 151, "Public Schools Act."

2. Night-schools shall be for the instruction of persons of the age of 15 years and upwards who may be debarred from attendance at the day-schools. No person shall be admitted who could conveniently attend a day-school.

3. Any such night-school shall be in session two hours. The prescribed register shall be kept, and the regular monthly and annual reports made in the form directed by the Superintendent of Education.

4. Night-schools shall be graded according to the attainments of the pupils, but owing to the diversified attainments of the persons likely to seek admission, the Council of Public Instruction does not think it expedient to lay down a precise course of study.

5. No portion of the cost of maintaining night-schools shall be paid from the Provincial Treasury, unless the classes are taught by the holders of Provincial Certificates or other certificates acceptable to the Council of Public Instruction. In all cases the Council would greatly prefer that the teachers of night-schools be other than teachers of day-schools; but where this may not be practicable, the Board of School Trustees may permit the teacher of a day-school to teach two evenings in the week.

6. For further information respecting the operation of night-schools, application should be made to the Organizer of Technical Education, Education Office, Victoria.

CORRESPONDENCE COURSES IN ARITHMETIC, COAL-MINING, AND SURVEYING.

For some years past the Department of Education has conducted night-schools for men engaged in the coal-mining industry in order to provide the requisite training for the examinations held by the Department of Mines.

The conditions of the shift system under which miners work have hitherto militated against the complete success of the venture. In order to overcome this difficulty, as well as to bring the opportunity of advancement within reach of a greater number of men, it has been decided to conduct the classes through the medium of correspondence.

The proposed courses of study will, as before, consist of subjects having a direct bearing on the work which must be mastered by those who seek certificates as shotlighters, overmen, and mine-managers.

A preparatory course leading up to the examinations referred to will also be provided for boys who have just left day-school to engage in work at the mines. It is thus hoped during the waiting or probationary period, which closes at the age of 23, not only to give these lads valuable training, but also to foster their ambition for promotion to responsible posts.

Six courses are provided, as follows:—

No. 1. Preparatory Mining Course for boys who have left school.

Section A	- - - $5 per section.
„ B	
„ C	
„ D	
„ E	
„ F	- - - $10.

No. 2. Preparatory Course in Arithmetic	$10
No. 3. Course for Fireboss, Shiftboss, or Shotlighter's papers (Third Class)	15
No. 4. Course for Overman's papers (Second Class)	25
No. 5. Course for Mine Manager's papers (First Class)	35
No. 6. Course in Mine Survey work	35

All fees payable in advance. For full particulars write for Bulletin No. 2, Department of Education, Technical Branch.

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