Atlantic Evaluation and Research Consultants

INTERMEDIATE PROGRAM REVIEW

Comparison of School Curricula at the Intermediate Level in Selected Canadian and Non- Canadian Jurisdictions

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Preamble (Canadian Jurisdictions)

The early portions of this report present the results of a comparative study of Grade 7, 8 and 9 curricula in selected *Canadian* jurisdictions. Specifically, the school programs compared are those available in the Atlantic Provinces, Ontario, and in the provinces/territories under the WNCP umbrella. Alberta and British Columbia curricula were accessed for courses not yet developed by the WNCP office.

While it is course content that comes under scrutiny for comparison purposes, there is generally a great deal of other pedagogical material in the on-line documents. These non-content features are dealt with briefly in the next section. The subsequent three sections respectively give (i) a broad overview of the complete courses of study in each jurisdiction, (ii) a more detailed look at 5 traditional/core subjects (English Language Arts, Mathematics, Social Studies, Science and Core French) and (iii) a synthesis of parts (i) and (ii).

For further elaboration and collaboration of the above described sections, refer to *Appendix 1 NATIONAL Grade 7, Appendix 2 NATIONAL Grade 8, Appendix 3 NATIONAL Grade 9* and Appendix 4—NATIONAL Emails. Also available without further comment in this report is *Appendix 5—NATIONAL "Instructional Time Comparison"*.

Features other than Course Content in On-line Documentation

While documentation was not uniform in the presentation of non-content material, it is fairly easy to give an aggregate, but not exhaustive, list of headings to describe such material:

- *Essential learnings*—broad goals related to the development of the whole student from the cognitive to the spiritual
- *Skills associated with a particular course*
- *Cross-curricular teaching & learning*
- *Using the tools of ICT*
- *Mental processes*—e.g., inquiry skills, critical thinking, problem solving
- *Values/attitudes*—e.g., values related to the self (morals/religion, striving for excellence), values related to relationships & society (tolerance & cultural inclusion), values related to the environment
- *Gender inclusiveness*
- *Multiple intelligences*
- *Students with special needs*
- *Safety*
- *Effective pedagogy*
- *Student assessment & reporting*
- *Parental/guardian involvement*

Two of the above, "effective pedagogy" and "student assessment" are selected for further comment.

Effective Pedagogy. While some documents are quite detailed on teaching techniques, there is, of course, no guarantee that all suggestions find their way into the classroom. Teachers are bound to select a few that they identify as the ones that give the best results coupled with economy of time and effort.

Viewed in a broad way, teaching techniques may be dichotomized into teacher-centred and student-centred approaches. Both have advantages and disadvantages. For example, over-use of a teacher-centred lecture approach can lead to student boredom and mental lethargy. On the other hand, a lively teacher-centred demonstration with appropriate props can lead to unforgettable learning experiences. Likewise, while student-centred approaches can foster good understanding as the student "learns by doing", over-used or unguided

student activities may use up valuable time at the end of which desired outcomes have not be realized.

The *Ontario Grades 1—8 Mathematics* document (2005, p. 24) makes a succinct statement that may be applied to any subject (with the last phrase being a decided nod towards the teaching of mathematics):

> It is important…that students have opportunities to learn in a variety of ways –individually, cooperatively, independently, with teacher direction, through hands-on experience, through examples followed by practice.

The Grade 9 document *Atlantic Canada in the Global Environment* (1998, p. 106) expands on pedagogical variety by listing 5 instructional approaches: (i) direct instruction (e.g., explicit teaching, demonstrations), (ii) indirect teaching (e.g., problem solving, case studies), (iii) experiential learning (field trips, conducting experiments), (iv) interactive instruction (debates, discussion), and (v) independent study (homework, research projects).

No matter what the approach, the skilful teacher will introduce new knowledge in a context that is already familiar to the students. Put another way, the teacher starts with the knowledge that the students already have and builds on that knowledge. Resource-based teaching which uses a variety of print and audio-video materials and incorporates the information technologies (interactive software, the Internet, appropriate data bases, etc.) should enhance that learning.

Student Assessment. To state the obvious, the purpose of student assessment is to provide information to (i) the student so that areas of *learning* strengths and weaknesses are identified, and (ii) the teacher so that areas of *teaching* strengths and weaknesses are identified.

As in the last section where teaching techniques were said to have two main categories, so too in student assessment the practices may be considered as two-fold:
(i) ongoing assessment such as teacher observation, classroom performance, journals, homework, etc, and (ii) more discrete assessments such as quizzes/tests and especially major examinations.

Just as good teaching techniques must take into account the diverse nature (intelligences) of the students, so too assessment techniques are no longer “one size fits all”. This is especially case where students are visually and hearing impaired, or have been diagnosed with other learning disabilities.

The variety of assessment instruments or techniques appear to be limited by the imagination only. The "Assessing & Evaluating Student Learning" segment of the *NL Grade 7—9 Language Arts Curriculum Guide* (1999, pp. 169, 176) lists no fewer that 30 assessment techniques and 16 features of an effective assessment process.

In addition to the myriad of classroom assessment episodes, Canadian students also write provincial assessments. For example,

- New Brunswick set a Grade 6 Science Assessment in June of 2007, a Grade 7 Literacy Assessment in October of 2007, and a Middle School (presumably Grade 8) Mathematics Assessment in June, 2007. (*NB K—12 Anglophone Sector English Education Service Division*)

- Between January 10 and 25 of 2008 a major assessment in Grade 9 Mathematics took place in Ontario (*Administering the Grade 9 Assessment in Mathematics*, EQAO, 2008)

- Alberta has posted a schedule for achievement testing in selected subjects in Grade 3, 6 and 9 to the year 2010. (*Achievement General Information Bulletin* (Alberta, 2007—2008)

- In British Columbia the standardized test *Foundation Skills Assessment (FSA)* which assesses reading, writing, and numeracy is set in grades 4 and 7. (*Student Assessment in B.C.'s Public Schools—A Guide for Parents*--2007)

Programs of Study in Newfoundland & Labrador and selected Canadian Jurisdictions

The supporting material for this portion of the report may be found in each provincial curriculum web page as given in the reference section.

While “Intermediate Grades” in Newfoundland and Labrador (NL) are Grades 7, 8, and 9, the students in these grades are not always under the same roof. Moreover, in some provinces the three grades are not taken together as a group. For example,

- In NB, Grades 7 and 8 are middle school grades (along with Grade 6) and Grade 9 is a high school grade.
- In the WNCP a large number of grade levels are covered in each document: for example, from K—12 in English language Arts, and from K—9 in mathematics.
- In ON, Grades 7 and 8 are elementary school grades and Grade 9 is classified as a secondary grade.
- In BC, more often than not, the curriculum documents are dichotomized into two blocks: K—7, and 8—to some higher HS grade.

In this section a complete course listing is given for each of the jurisdictions at the intermediate level. Subjects in *italics* are assigned a brief elaboration at the end of each sub-section.

Newfoundland and Labrador (NL). The Intermediate School Curriculum in Newfoundland and Labrador is outlined in the 2007-2008 School *Program of Studies* as follows:

English Language Arts
Mathematics
Science
Social Studies
French
Religious Education
Technology Education/*Industrial Arts*/Home Economics
Physical Education
Music
Art
Health
Enterprise Education
Career Exploration (Grade 9)

Newfoundland is the only Canadian jurisdiction in the sample to list Religious Education in the sense that it is assigned a time allotment (8%). As will be recorded later in this paper, in the province of Alberta Religious Education may be offered *at the discretion of the local school board*.

In NL, *Industrial Arts* is being phased out in favour of technology education. The NL *Program of Studies* also states that *Career Exploration* and *Enterprise Education* are to be integrated into one or more of the other listed subjects. Although not immediately evident from the *Program of Studies*, it is probably safe to assume that students have the option of doing one of Industrial Arts/Technology Education or Home Economics.

Noticeably absent from the above list is an overt reference to CIT (Communication & Information Technologies). Therefore it needs to be pointed out that Technology Education (which *is* listed) consists of three modules (one for each of Grades 7, 8 & 9) with the Grade 7 module entitled "Communications Technology". In addition, curriculum documents indicate areas where it is desirable to integrate CIT as a cross-curricular feature.

Prince Edward Island (PE). The following subjects are listed in the PE *Program of Studies* (2007-2008):

Language Arts
Mathematics
Social Studies
Science
French
Music
Art
Industrial Technology
Manufacturing Technology Module (Grade 9)
Home Economics
Physical Education
Health Education

CIT (Communications & Information Technologies) is integrated across the curriculum. Manufacturing Technology is an optional Industrial Technology module in Grade 9.

While reference to "career education" is missing from the above list, it must be said that Industrial Technology has a module entitled "Technology & Careers". Also in the Health course "students will use resources effectively to manage and explore life roles and career opportunities and challenges."

Nova Scotia (NS). The 2003-2004 NS *Program of Studies* divides the school program into compulsory and elective sections:

Compulsory:
French (or Mi'kmaw or Gaelic)
Language Arts
Mathematics
Science
Social Studies
Health (mentioned in Grade 7 only)
Personal development and Relationships
Physical Education

Plus one elective:
Art
Family Studies
Technical Education
Music

In NS, native languages have equal status with French in that at least one of French, Mi'kmaw or Gaelic is compulsory. Note that while Health is named in Grade 7 only, the course entitled Personal development and Relationships is a parallel one that continues into Grade 8 and 9. The "plus one elective" terminology is almost certainly not restrictive. That is, it is very probable that some students do more than one elective during their time in Grades 7—9.

In addition to the subjects listed, exploratory courses (or mini-courses) may be incorporated into existing courses to enrich the curriculum in Grades 8 and 9. For example, a module entitled "Community Economic Development" is incorporated into the Grade 9 Social Studies Program.

New Brunswick (NB). In NB, Grades 7 and 8 are Middle School grades while Grade 9 is at the High School level. The complete list of courses for the 3 grade levels as given below is available at NB *K-12 Anglophone Sector English Educational Services Division*.

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Grade 7 & 8	Grade 9
English Language Arts	English Language Arts
Mathematics	Mathematics
Social Studies	Social Studies
Science	Science
French Second Language (Core)	*French Second language (Immersion)*
French Second Language (Immersion)	The Arts *(*visual arts, dance, drama and music)
Art	Health and Physical Education
Music	Guidance
Health	*Technology/Vocational Education*
Guidance (Personal Development)	*Coop Education*
Physical Education	*School-Career Transitions*
Technology Education	

NB references given in Appendices 1 and 2 indicate that both Core French and French Immersion are done in Middle School. However, the only reference to French in all other grades (i.e., Elementary & High School) is "French Immersion". Email contact with the NB Department of Education indicates that there is indeed "some" core French at the Elementary and High Levels, "but every school district is different." (See Email 2 from NB in Appendix 4).

While there is no clear indication of the number of students enrolled in the courses, the last three Grade 9 subject areas suggest strong emphases on "career education". It needs to be pointed out that the last in the list (School-Career Transitions) is an umbrella document that includes long-term work experiences such as Youth Apprenticeship Programs and the earlier mentioned Coop Education, plus one to three day endeavours such as job shadowing.

Ontario (ON). ON school structure is similar to that of NB in that Grades 7 and 8 are classified as Elementary grades and Grade 9 is at the Secondary level (See detail at the ON *Curriculum by Subject* web site).

Grades 7 and 8	Grade 9
Language	English
Mathematics	*Mathematics*
History	*Canadian & World Studies*
Geography	Science
Science and Technology	*French as a Second language*
French (core French, extended French)	*Native Languages*
Native Languages	*Native Studies*
The Arts (music, visual arts, drama, dance)	English as a Second Language
Health and Physical Education	The Arts (music, visual arts, drama, dance)
	Business Studies
	Classical and International Languages
	Guidance & Career Education
	Social Sciences
	Health & Physical Education
	Technological Education

In the province of Ontario, starting in Grade 7 and continuing in the higher grades, Social Studies consists of two courses, History & Geography. In like manner, the Grade 9 Canadian & World Studies has history and geography components. (However, it is the geography component which is done in Grade 9 with the history component being studied in Grade 10). ***Also, much of the ON Grade 9 curriculum is delivered at two levels: academic and applied.*** [1] Coincidentally, the two-stream courses are the ones selected for closer scrutiny later in this report—these being English, Mathematics, Science, Social Studies, and Core French.

As in NB, so too in ON, "The Arts" go beyond the usual two of visual arts and music to include drama and dance. The ON documentation has a fifth Arts component in Grade 10, that being "Media Arts".

Note that the title of the science course in Grades 7 and 8 is Science and Technology. The dual nature of the course is acknowledged by the inclusion of

[1] In Ontario there are also "transfer" courses to facilitate student movement from the applied to the academic program.

a second set of outcomes in addition to content or knowledge outcomes. The second set is called "Relating Science and Technology to the World Outside the School".
There appears to be three levels of French curriculum: Core French, Extended French and French Immersion where Extended French is more intensive than Core French, but less intensive than French Immersion. The documentation suggests that Extended French begins no earlier than Grade 4. In Grade 9 the "French as a Second Language" document presents all three levels—however, only Core French is delivered at both the academic and applied levels—that is, Extended French and French Immersion are taught at the academic level only.

The Native Languages courses allow First Nation students (as well as interested non-native students) to study one of Cayuga, Cree, Delaware, Mohawk, Ojibwe, Oji-Cree, and Oneida. In Grades 9 and 10 the students may become more immersed in First Nation culture by enrolling in Native Studies which at the Grade 9 level covers Aboriginal cultures in Canada through an exploration of art forms—painting, sculpture, storytelling, dance, and music—created by Aboriginal artists.

Western & Northern Canadian Protocol plus programs in Alberta & British Columbia (WNCP / AB / BC). Only four subject areas have documents under the WNCP (see the WNCP Homepage)**.** Consequently, Intermediate Science and French are taken from the curricula of AB and BC (See AB *Programs of Study* and BC *Learning Resources—Grade Collections).*

WNCP	AB (core in addition to WNCP)	BC (core in addition to WNCP)
English Language Arts (K—12)	Science	Science (K—7, 8, 9)
Mathematics (K—9)	French	French (5—12)
Social Studies (K—9)	Physical Education	Physical Education
International Languages (K—12)	Health & Life Skills	Health & Career Education
	ICT	ICT

The WNCP International Languages vary from province to province. For example in AB the following languages are available: Chinese, German, Italian, Japanese, Spanish and Ukrainian. Also In AB, in addition to the usual core/traditional subjects, students select from *complementary courses* that include Fine Arts, Environmental and Outdoor Education, Ethics, and locally developed courses (see more detail on optional courses below). Religious studies may be offered at the discretion of the local school board, under Section

50 of the Alberta School Act. As well, "Knowledge & Employability" courses are available for student who intend going directly into the work force from school.

In BC the AB list of International languages is expanded to include Korean, and Mandarin Chinese. There appears to be no curriculum documentation on religious studies in this western province. The "Arts" offerings of drama, visual arts, and music of AB are expanded to include dance in the BC curriculum. In addition to the courses listed as "core" above, the BC documentation includes other courses: e.g., Business Education (Grade 8+), and Home Economics (Grade 8+). Also, while ICT has been listed as BC core, it should be pointed out that the BC K to 12 Education Plan requires the integration of Information Technology K to 7 and 8 to 10 with other curricular areas. Information Technology 11 and 12 is a stand-alone course.

It was possible to isolate some detail on courses considered to be optional or elective courses in Alberta (see Alberta web-sites *Alberta Education* and *Guide to Education*) and British Columbia (see British Columbia *Required Areas of Study* web-site).

The following subjects are offered as optional subjects at the junior high level in Alberta:

- career and technology studies;
- English as a second language;
- fine & performing arts (art, drama, music, choral, general, instrumental)
- French as a second language;
- green certificate programme (specialization in agricultural production);
- integrated occupational programme;
- international and native languages;
- social sciences;
- locally developed courses
- other subjects, such as career internship, environmental and outdoor education, ethics, religious education, and knowledge & employability courses.

Alberta Schools shall offer two provincially authorized optional courses except where instruction in a language other than English is offered, then only one other provincially authorized optional course is required.

In Alberta optional courses are allowed 150 hours per year.

In addition to English, mathematics and science, the subjects of French, health & life skills, physical education and social studies are considered to be core

subjects in Alberta. ICT is also listed as core but is not intended to stand alone. Rather it is to be infused within other core courses and programs.

In British Columbia Grades 8-10 students must study one or more of the four fine arts subjects each year (dance, drama/theatre, music and visual arts). Recommended time: 5%

Also in Grades 8-10, BC students choose one or more of the four subject options of Applied Skills (technology education, information technology, home economics, business education). Recommended time: 5%.

Manitoba and Saskatchewan. The programs of these two provinces are not looked at detail in the next section. However, information on compulsory and elective subjects, and the associated instructional time in these two provinces may be found *in Appendix 5—Instructional Time in Intermediate Schools (Canada)*.

A Closer Look at the Five Subject Areas of English Language Arts, Mathematics, Social Studies, Science and Core French in Selected Canadian Jurisdictions

The more detailed supporting material for this section of the report may be accessed by following the appropriate links at the curriculum web pages for each province (see reference list at the end of the report). Alternatively, direct links to all subjects & topics are available in *Appendices 1—3 National Curriculum* which provide detailed information on Grades 7—9, respectively.

English Language Arts. The Language Arts Program in Grades 7—9 is a common one throughout the four Atlantic Provinces. Indeed, not surprisingly, the common strands across *all* jurisdictions are oral communications, reading, and writing. If there is one topic that appears to stand out as receiving different (more in-depth) treatment, it is the presentation of *media literacy* in the ON documentation. Also, to reiterate an earlier point: in ON, English is offered at *academic* and *applied* levels.

Mathematics. As with Language Arts, the Mathematics curriculum is identical across the Atlantic Provinces. In fact, Intermediate mathematics has five virtually identical strands across *all* jurisdictions (with two delivery levels for ON Grade 9—academic and applied[2]). While not always in the same order or same wording, these strands may be listed as

- Number concepts / number relationships / number operations / number sense / numeration
- Measurement
- Patterns & relations / variables & equations / algebra
- Shape & space / geometry
- Data management & probability / data analysis & chance & uncertainty

Social Studies. It is the Social Studies Program that exhibits the greatest variety among the Canadian jurisdictions. As shall be seen, this even occurs in the Atlantic Provinces where an attempt is being made to follow CAMET framework documents.

[2] ON also has a third mathematics course— a “cross-over” (transfer) course for students wishing to go into the academic mathematics course after doing the less rigorous “applied” course.

Since the Atlantic Provinces are following a common Social Studies CAMET document, Grade 7 Social Studies is identical in NL, PE, and NB. While NS documents are not available on line, there is no reason to assume that the Grade 7 SS course in that province is different. The Grade 7 course presents the various facets of *Empowerment*: economic, political, cultural, societal and national. NL Grade 8 SS, however, departs from the CAMET program (at least from a content point of view) and delivers a course on the *History of Newfoundland and Labrador*. In Grade 9, the Atlantic provinces are more in tune once again, but even there NB has elected to reverse the Grade 8 SS (*Canadian Identity*) and the Grade 9 SS (*Atlantic Canada in the Global Community*).

In ON, history and geography are separate components with both components being done in Grades 7 and 8, but only geography being done in Grade 9 (at this level the history component is studied in Grade 10).

ON Grade 7 History teaches early Canadian history (i.e., New France and British North America, with a third unit entitled "conflict & change"). ON Grade 8 History continues on the time line by dealing with Confederation, the Development of Western Canada, and Canada: A Changing Society.

ON Grade 7 geography is built on two broad themes: Physical Geography and Natural Resources. ON Grade 8 Geography has three units: Patterns in Human Geography, Economic Systems, and Migration. As these Grade 7 and 8 sub-titles suggest, the discussion is by no means limited to a Canadian focus (except to some degree in the Grade 8 unit, Migration.)

In ON, there are two levels in Grade 9 Geography: academic and applied, both dealing with the *Geography of Canada* and comprising five strands—(i) Space & Systems (geographic foundations), (ii) Human-environment Interactions, (iii) Global Connections, (iv) Understanding & Managing Change and (v) Methods of Geographic Inquiry and Communication .

WNCP Grade 7 Social Studies is called *Canada*, *A Country of the North*. It can be summarized under four main headings: (i) Canada's Northern Character, (ii) Intercultural Contact, (iii) the Settlement of Diverse Groups, and (iv) Connections to Other Circumpolar Countries.

WNCP Grade 8 Social Studies is titled *Exploring Worldviews of the Past*. Students will reflect upon their own world views by exploring (i) Worldviews of Past Societies, (ii) How Worldviews are Shaped, (iii) Contact between Societies with Differing Worldviews, and (iv) Indigenous Societies.

The title of the WNCP Grade 9 Social Studies is *Canada: Opportunities & Challenges*. Students are exposed to six units: (i) Culture & Community, (ii)

The Land: Place & People, (iii) Time, Continuity & Change, (iv) Global Connections, (v) Power & Authority, and (vi) Economics & Resources.

Despite the Social Studies diversity alluded to at the beginning of this section, a summary statement for the 6 Canadian jurisdictions (4 Atlantic Provinces, Ontario, and WNCP) shall be attempted—keeping in mind that the WNCP documentation itself covers multiple jurisdictions: Manitoba, Saskatchewan, Alberta, British Columbia, Yukon Territory, Northwest Territories and Nunavut.

It can be said, then, that the 4 Atlantic Provinces are more or less synchronized with Grade 7 (*Empowerment*) being the same in all four provinces, and the subject titles in Grade 8 and 9 being *Canadian Identity* and *Atlantic Canada in the Global Community*, respectively. The exceptions to this sequencing is that NL has elected not do *Canadian Identity* (having launched the *History of Newfoundland & Labrador* in Grade 8), and NB has switched the order of the Grade 8 and Grade 9 courses. In the Atlantic Provinces, there is the complete gamut as far as focus is concerned. That is to say, there is the most specialized "provincial" course taught in NL Grade 8 SS, which expands to the a study of the Atlantic Region in Grade 9, to Canada as a whole in non-NL Grade 8, and finally to the most general (at least in the geographical sense) in the *Empowerment* course of Grade 7.

Other than in our own province (i.e. Grade 8 History), there is no other jurisdiction that has a whole course totally focusing on itself. The next most "regionalized" programs (outside of Atlantic Canada) are ON Grades 7 & 8 History which deal with large Canadian regions, and the WNCP Grade 7 course *Canada, A country of the North*. After that, the programs which consider Canada as a whole are ON Grade 9 Geography and WNCP Grade 9 Social Studies. Finally the most general treatment (from a geographical point of view) can be found in ON Grades 7 & 8 Geography and WNCP Grade 8 Social Studies.

Science. Adherence to a common APEF document has guaranteed identity among all topics offered in Grades 7, 8, and 9 Science in the Atlantic provinces. Each of the Atlantic Provinces Intermediate courses is comprised of 4 units, one of each related to: "Life Science", "Physical Science - Physics", "Physical Science - Chemistry", and "Earth and Space Science". With regard to the last unit, the "earth science" portion is covered in Grades 7 and 8 while the "space science" content is studied in Grade 9. In fact all four Atlantic provinces follow this pattern.

In the Atlantic Canada Grade 7 Science course, the above general headings are distilled into (i) ecosystems, (ii) heat, (iii) mixtures and (iv) earth science. These headings are very similar to the Grade 7 Science strands in ON, AB and

BC.[3] The only exception is that the provinces of ON and AB have a fifth strand dealing with "structure strength / stability".

In Atlantic Canada Grade 8 Science, the APEF general headings translate into (i) cells, tissues, organs, and systems, (ii) optics, (iii) fluids, and (iv) water systems on earth. Again, these headings are virtually identical to those in ON, AB, and BC where, once again, the ON and AB have a fifth strand: "mechanical efficiency".

Lastly, the unit headings in Grade 9 Science in the four Atlantic Provinces are (i) reproduction, (ii) electricity, (iii) atoms & elements, and (iv) space science. Here the headings are identical to those of ON and BC. The AB "biology" heading appears to be somewhat more general (biological diversity) and while the fourth AB heading is identical to that of the Atlantic Provinces (i.e., space exploration), *both* of the remaining two headings are chemistry related (matter & chemical change and environmental chemistry). The other point to be remembered is that ON provides Grade 9 Science at two different levels of difficulty: academic and applied.

In summary, it can be said that there is a remarkable similarity among the science programs of the Canadian jurisdictions surveyed. It appears to be a safe conclusion that the courses were not developed in isolation.

Core French. As in the case of all previous subject areas surveyed in this paper, Grade 7—9 French in the Atlantic Provinces is based on a common APEF document. In that document the material is presented via three strands: (i) communication, (ii) culture, and (iii) general language education. In other jurisdictions there are varying ways that the strands are phrased with ON being the most precise (oral communications, reading, writing) and BC being the most wordy (communicating, acquiring information, experience creative works, understanding cultural influences).

To reiterate earlier points: In NB Grade 9, there appears to be no provincial document for core French. Information from NB Department of Education indicates that there is "some" core French in High School, but all districts are different.[4] From the French documentation available for NB, it can be said that in high school the stress is on French Immersion.

ON delivers core French at academic and applied levels in Grade 9. In addition, ON has a third level of French called "extended French" which lies

[3] The provinces of AB and BC were surveyed here because there are no Science outcomes in the WNCP documentation.
[4] See Email 2 from NB in Appendix 4.

between Core French and French Immersion. Finally, as one travels west across the nation, the French curriculum becomes just one of several non-English courses among several First Nation and International languages.

A Synthesis of Canadian Documentation

Programs of Study for the Intermediate Grades were surveyed from the following jurisdictions:

- Four Atlantic Provinces
- Ontario
- WNCP (this protocol includes the four prairie & western provinces plus three northern territories)
- Alberta & British Columbia (specifically for Science & Core French which are not developed for WNCP)

From the point of view of the curriculum documents only three of the jurisdictions (NL, PE and NS) consider Grades 7—9 as separate from other grade groupings. There are at least four other curriculum configurations:

- In NB, Grades 7 and 8 are middle school grades (along with Grader 6) and Grade 9 is a high school grade.
- In the WNCP a large number of grade levels are covered in each document: for example from K—12 in English language Arts and from K—9 in mathematics.
- In ON, Grades 7 and 8 are elementary school grades and Grade 9 is classified as a secondary grade.
- In BC, more often than not the curriculum documents are dichotomized into two blocks: K—7, and 8—to some higher HS grade.

The following are observations regarding the Programs of Study in the jurisdictions surveyed:

- *For all jurisdictions there is much consistency both in the names and the contents of traditional/core subjects.*
- There is a greater proliferation of courses, specifically in non-English language and Native Studies courses in Mainland Canada.
- Appendices 1, 2, and 3 contain frequent suggestions for cross-curricular learning. This especially applies to the Information Technologies, but also (for example) to the integration of mathematics and language arts skills into other subjects. The NS documentation refers to exploratory courses (or mini-courses) that may be incorporated into existing courses to enrich the curriculum in Grades 8 and 9.

- Only one province (Ontario) has course descriptions that cater to the academic and non-academic student and these begin at the Grade 9 level.
- AB has “Knowledge & Employability” courses for students who go directly into the work force from school. These courses start in Grade 8 and, of course, do not pre-empt students from continuing their education instead of seeking employment.
- There is interesting variety in “The Arts”: in NL, PE and NB, visual art and music are listed; in AB, there are visual art, music and drama; and in ON & BC, visual art, music, drama and dance.
- NL is the only province that overtly assigns instructional time to Religious Education (8%).

The major effort in this survey was given over to a closer look at 5 core subjects in the jurisdictions. These subjects are

- English Language Arts
- Mathematics
- Social Studies
- Science
- Core French

The documentation suggests that all four of the Atlantic Provinces have installed (or nearly so) a common curriculum in all five of the listed curriculum areas. There are a small number of eventualities which negate complete equivalency. For example, in NL the Social Studies curriculum has departed from the APEF foundation document by introducing into Grade 8 a unique course on the history of Newfoundland and Labrador. Also in Social Studies, NB has elected to interchange the Grade 8 and 9 programs. As well, there is no provincial curriculum document for NB core French in Grade 9 (it seems that in the high school grades of NB the stress is on French Immersion.) Apart from these perturbations in Social Studies and French, and the difference in timing as each province introduces the programs, it appears that there will soon be a common curriculum in the Atlantic Provinces, at least in the core subjects.

The tone of the last paragraph can be applied to all the Canadian jurisdictions in this survey. That is to say, it is Social Studies that is most varied across Canada. This is not surprising if only because one would expect a province or territory, at least at some grade level, to focus on its own geography and history. Even with this tendency, the “sameness” of the social studies curriculum is fostered when courses deal with Canada as a whole, or with global issues.

The similarities among the other four subject areas have been very well identified in all jurisdictions. *In all of Language Arts, Mathematics, Science and Core French, the strands can be said to be the same or very nearly the same*. Obviously, isolated differences can be pin-pointed. For example:

- in ON English, the topic "media literacy" appears to receive more treatment than in the other provinces and territories
- in Mathematics the strands are not presented in exactly the same order in all jurisdictions
- in Grade 7 and 8 Science, ON and AB have an extra (fifth) strand focusing on "structure strength / stability" which is not covered in the other jurisdictions. In Grade 9 Science, ON is the only province which shows contrast in that there is no traditional physics strand in the course
- in ON French there is a third stream called "Extended French" which falls between Core French and French Immersion in intensity of treatment, and finally
- in ON the Grade 9 core subjects are delivered at two levels: academic and applied.

As a closing statement for the foregoing Canadian comparisons, an earlier sentiment bears repeating: for the Canadian jurisdictions surveyed, the similarities in program content are remarkable.

Preamble (Non-Canadian Jurisdictions)

Curriculum information was compiled from four non-Canadian jurisdictions: the United Kingdom (UK), New Zealand (NZ), South Australia (SAu) and Finland (FIN). As will be further detailed in the next section, the curriculum outcomes in these jurisdictions were available over various ranges of ages/grade levels, and not for each grade level as is the case in Newfoundland and Labrador (NL). As it turns out, in each country one such range approximates (or very nearly approximates) our own junior high school years. Therefore, it will be convenient to use NL Grade Nine as a benchmark when comparing curriculum outcomes and to refer to NL Grade 7 and 8 as necessary.[5]

As in the earlier sections of this report, so too for each of the non-Canadian jurisdictions, the complete list of courses is first given, then for economy of presentation the discussion is mostly limited to five subject areas: Mother tongue, Mathematics, Social Studies, Science and Foreign Language.

For further elaboration and collaboration of the information that follows (plus references) the reader is referred to *Appendix 6 INTERNATIONAL CURRICULUM* and *Appendix 7 INTERNATIONAL EMAILS.*

[5] The details of these cross-references to NL Grade 7 and 8 are provided in Appendix 6 INTERNATIONAL CURRICULUM.

The Structure of the Learning Environment in Four Non-Canadian Jurisdictions

The broad curriculum categories in the four non-Canadian jurisdictions are summarized in TABLE 1 on page 22. No attempt has been made to describe the myriad of school structures in the jurisdictions. That is, there are no definitions of, or a frequency count for primary schools, elementary schools, all-grade schools, composite schools, secondary schools, intermediate schools, "contributing" schools, "composite" schools, comprehensive schools, etc., etc.

Close examination of the table will indicate the following:

- In the UK, the curriculum documents are divided into 6 *stages* each of which covers multiple years of schooling from pre-school to Sixth Form.
- SAu has similar curriculum structure (*standards* instead of *stages*) with the added nomenclature of "bands" to describe various groupings by age.
- The NZ curriculum has the greatest number of curriculum groupings, there being 8 *levels* beyond the early childhood years.
- The Finnish curriculum is the most "compact" in that the first 9 years of schooling have a single descriptor: *basic education* (covering *primary* and *lower secondary*). The senior years are called *upper secondary*, before which there is the option of a bridging year after basic education.

[A cautionary note when reading the table: terms of the form "7 yrs" refers to age; terms of the form "Yr 7" refers to 7 years of schooling]

TABLE 1—Program Structure in 4 Non-Canadian Jurisdictions

Jurisdiction	Curriculum Stage/ Level	Yrs of Schooling / Approx Age	Comments
United Kingdom[6]	Foundation Stage	Nursery to "Reception" (3-5 yrs)[7]	Pupils transfer from primary schools to secondary schools at age 11 years. Where middle schools exist, pupils are transferred from primary school at age 8 or 9 years, then onto secondary education at age 12 or 13 years. **The UK Key Stage 3 outcomes are chosen for comparison with NL Intermediate Grades**
	Key stage 1	Year groups 1-2 (5-7 yrs)	
	Key stage 2	Year groups 3-6 (7-11 yrs)	
	Key stage 3	Year groups 7-9 (11-14 yrs)	
	Key stage 4	Year groups 10-11 (14-16 yrs)	
	6th Form or equiv. (optional)	Beyond 16 years	
South Australia[8]	Standard 1	To end of Year 2 (6 or 7 yrs)	SAu Curriculum Framework has "Bands" (Early Band—birth to Yr 2; Primary Band—Yrs 3, 4, & 5; Middle Band—Yrs 6, 7, 8, & 9; Senior Band—Yrs 10, 11, & 12). **Standard 4 is the most convenient set of out-comes for comparison purposes.**
	Standard 2	To end of Year 4 (8 or 9 yrs)	
	Standard 3	To end of Year 6 (10 or 11 yrs)	
	Standard 4	To end of Year 8 (12 or 13 yrs)	
	Standard 5	To end of Year 10 (14 or 15 yrs)	
	Year 12 Standard	To end of Year 12 (16 or 17 yrs)	
New Zealand[9]	Early Childhood Ed	From early child-care to kindergarten (to 4 or 5 yrs)	While there is "mixing & matching", general NZ designations are: Primary Schools (Yrs 1—6), Intermediate Schools (Yrs 7—8), Secondary Schools (Yrs 9—13).[10] **In NZ, Level 4 is chosen as a comparison bench-mark.**
	Beyond Early Childhood Education, curriculum outcomes are in 8 levels with each level overlapping adjacent levels…	…e.g., Level 1 (Yr 1 to Yr 3, where Yr 1 approximates age 5 or 6 years); Level 2 (Yr 2 to Yr 5)...Level 4 (Yr 7 to yr 9)…Level 8 (yr 12 to Yr 13, where Yr 13 approximates age 17 years)	
Finland[11]	Pre-Primary (voluntary)	6 years old	*Basic Education* has 2 levels[12]: Primary (Years 1 to 6, or 7—13 year-olds) and Lower Secondary (Years 7—9, or 14 to 16 year-olds) **Years 7—9 were compared with NL Intermediate courses.**
	Basic Education	9 years of schooling (7—16 yrs)	
	One additional Basic Education Year	Some Students omit this step & move to next level	
	Upper Secondary	Matriculation examination and/or vocational & apprenticeship training (generally 17-19 yrs)	

[6] http://www.teachernet.gov.uk/educationoverview/uksystem/structure/

[7] At 5 years of age UK children enter a "reception" class which seems to parallel kindergarten in NL.

[8] http://www.sacsa.sa.edu.au/index_fsrc.asp?t=Home

[9] http://www.minedu.govt.nz/web/downloadable/dl11630_v1/nz-education-system-p130.pdf

[10] http://www.minedu.govt.nz/web/downloadable/dl11630_v1/nz-education-system-p130.pdf

[11] http://www.minedu.fi/export/sites/default/OPM/Koulutus/koulutusjaerjestelmae/liitteet/finnish_education.pdf

[12] See p. 19 of http://www.minedu.fi/export/sites/default/OPM/Julkaisut/2006/liitteet/eng_opm15.pdf?lang=en

Features other than Course Content in Non-Canadian Documentation

As is the case with the Canadian documents, so too in the non-Canadian documents there is much information that lies outside the "content" realm of the programs. Most of the non-content material is presented under such headings as those listed below:

- *Essential learnings*—broad goals related to the development of the whole student from the cognitive to the spiritual
- *Skills associated with a particular course*
- *Cross-curricular teaching & learning*
- *Using the tools of ICT*
- *Mental processes*—e.g., inquiry skills, critical thinking, problem solving
- *Values/attitudes*—e.g., values related to the self (morals/religion, striving for excellence), values related to relationships & society (tolerance & cultural inclusion), values related to the environment
- *Gender inclusiveness*
- *Multiple intelligences*
- *Students with special needs*
- *Safety*
- *Effective pedagogy*
- *Student assessment & reporting*
- *Parental/guardian involvement*

There are other features of the education programs in three of the non-Canadian jurisdictions that deserve mention. For the most part, the discussion below shows a strong government initiative in the development of pre-school education.

Pre-Schooling in South Australia—pre-schooling starts from the ages of 3 or 4 years depending on the date of birth and level of development of the child. The state government has a key leadership role in that early childhood education and care services are provided, licensed or sponsored by the Department of Education and Children's Services. These services are available for young children from birth to pre-school, plus childcare for children attending school. A range of services are available to meet a family's particular needs. These include preschool education, childcare, and services to support the child's health and well-being in addition to services that support the adults in their role as parents. (SAu *Department of Education and Children's Services* Web Page

Early Childhood Education in New Zealand—In 2002 the Government of New Zealand published a report sub-titled "A 10-year Strategic Plan for Early Childhood Education". Already in place at the time of the writing of this report were the following services: (i) Education & Care Centres, (ii) Government approved home-based centres, (iii) special Maori Pre-school Programs, (iv) Parental Support & Developmental Programs, (v) Play Centres and (vi) the most intriguing of all, Correspondence Schools (Distance Learning) for 3 to 5 year-olds. The goals of the 10 year plan are three fold:

- to increase participation in quality ECE services
- to improve quality of ECE services
- to promote collaborative relationships

(NZ *A 10-year Strategic Plan for Early Childhood Education*, p. 5)

Early Childhood Education & Care System (ECEC) and other initiatives in Finland--The Finnish ECEC system consists of Municipal and private services. Municipalities must offer day care in the official languages of Finland: Finnish, Swedish, Sàmi and Romany and in the language of children of immigrant background. In addition to the ECEC system, there is also a voluntary "pre-school" program for 6 year-olds. In 2000, a core curriculum was drawn up for pre-school education. The general principles set forth in the core curriculum emphasize the child's individuality and the significance of active learning and functioning as a group member. The core curriculum does not divide instruction into subjects or lessons, but it does include various subject fields and objectives. These subject fields are: language and interaction, mathematics, ethics and philosophy, environmental and natural studies, health, physical and motor development and art and culture. (FIN *Early Childhood Education and Care in Finland* and FIN *Pre-School Education*)

Another interesting feature of Finnish education is the provision (by law in 2004) of before-school and after-school activities: "Before- and after-school activities shall be offered for 570 hours during the school year to each participating child."…"The purpose of before- and after-school activities is to support the school's and the home's educational work and the development of the child's emotional life and ethical growth. In addition, before- and after-school activities shall promote children's welfare and equality in society and prevent exclusion and promote inclusion." … "Before- and after-school activities shall be available to all Year 1 and Year 2 students, and to all Special Needs students in all grades to the end of Year 9." Attendance in these activities is voluntary and schools may charge a monthly fee for the services provided. (*Basic Education Act 628/1998 Amendments up to 1136/2004,* pp. 20—21)

Programs of Study in Newfoundland & Labrador and selected Non-Canadian Jurisdictions

In this section a complete course listing is given for each of the jurisdictions at the intermediate level. Subjects in *italics* are assigned a brief elaboration at the end of each sub-section.

The supporting material for this portion of the report may be found in the Non-Canadian curriculum web pages as given in the reference section.

Newfoundland and Labrador (NL). The Intermediate School Curriculum in Newfoundland and Labrador is outlined in the 2007-2008 School *Program of Studies* as follows:

English Language Arts
Mathematics
Science
Social Studies
French
Religious Education
Technology Education/*Industrial Arts*/Home Economics
Physical Education
Music
Art
Health
Career Exploration
Enterprise Education

Industrial arts is being phased out in favour of technology education. The NL *Program of Studies* also states that Career Exploration and Enterprise Education are to be integrated into one or more of the other listed subjects. Although not immediately evident from the *Program of Studies*, it is probably safe to assume that students have the option of doing one of Industrial Arts/Technology Education or Home Economics.
(NL *Program of Studies—Intermediate*, 2007-08)

The United Kingdom (UK). The list below gives the subjects for Key Stage 3 (ages 11—14 years) of the *UK National Curriculum*:

English
Mathematics
Science
Geography
History
Modern Foreign Language
Art & Design
Careers Education
Citizenship
Design & Technology
ICT
Music
Physical Education
Personal, Social & Health Education [non-statutory]
Religious Education
Sex Education

The greater length of the UK offering is somewhat artificial in that social studies is comprised of two discrete subjects, *Geography* and *History*. Also, *ICT* is listed as a separate course even though there are indications that it is integrated among the other subjects. In like manner, *Sex Education* may be offered as part of *Personal, Social & Health Education.* With these delimitations, it can be concluded that *Citizenship* is the only UK course not offered in NL (at least in name). It should be noted that even though each school must provide *Religious Education*, parents/guardians may choose to have their children exempted. (UK *National Curriculum* Web Page)

South Australia (SAu). SAu Middle Years Band (school years 6—9) closely parallels the intermediate grade levels of our province. Curriculum outcome groupings are called "Standards" with each standard covering two years of schooling. The courses for Standard 4 (Years 7 and 8) are as follows:

English
Mathematics
Society and Environment
Science
Languages
Arts
Design and Technology
Health and Physical Education

Religious Education
Equity Cross Curriculum Perspectives
Enterprise & Vocational Education

The SAu Middle School Arts program includes the major arts forms of dance, drama, media, music and visual arts, combinations of these art forms, and those that are newly emergent.

In SAu *Religious Education* is provided in "some non-government schools". *Equity Cross Curriculum Perspectives* and *Enterprise & Vocational Education* are integrated across the curriculum.

A most interesting modular topic integrated throughout SAu schooling is "Crime Prevention Education".
(SAu *Middle Years Program* Web Page)

New Zealand (NZ). In New Zealand, "intermediate grades" are designated as Years 7 and 8. However, in a manner similar to South Australia, the NZ curriculum is divided into "Levels" with Level 4 curriculum objectives most closely matching years 7, 8 and 9. The subjects are

English
Mathematics & Statistics
Social Sciences
Science
Learning Languages
The Arts (music, dance, drama, visual arts)
Health & Physical Education
Technology

Note the unique title for the Mathematics program.

Also note that, similar to SAu, the Arts are a four-fold offering: visual, music, drama, and dance.

The law requires New Zealand state primary schools to offer secular (non-religious) education. School boards may choose, however, to allow volunteers to provide a limited amount of religious instruction at school. Also, while it appears that "career education" is not a separate subject, this service is still provided as part of the guidance program. In like manner "sex education" is a feature of the Health & Physical Education Course. (NZ *Curriculum On-line*)

Finland (FIN). Forms 7—9 (13—15 year-olds) of the National Core Curriculum of Basic Education in Finland contain the following subjects and combinations:

Mother Tongue and Literature (i.e., Finnish or Swedish)
Second National Language (i.e., Swedish or Finnish)
Mathematics
History and Social Studies
Biology and Geography
Physics and Chemistry
Foreign languages
Environmental studies
Health education
Religious education or ethics,
Physical education
Home economics
Music, Art, Crafts.
Educational and vocational guidance

While it is not surprising that subjects like physics and chemistry would be combined at the intermediate level, the grouping of Biology and Geography is somewhat intriguing.[13] Also the pairing of History and Social Studies appears at first to be redundant. In fact, Social Studies is specifically a study of present-day Finnish society and economic life plus the European Union, while History covers events in Finland and to some extent the world during the 19th and 20th century.

Guidance may be done in or outside class, in small groups or individually, and takes on a special significance as students make decisions at the end of Basic Education.

Three other official languages not mentioned in the above list are Sami, Romany and Finnish Sign Language.

While the national core curriculum includes the objectives and core contents of different subjects, it is the education providers, usually the local education authorities and the schools themselves who draw up their own curricula within the framework of the national core curriculum.
(FIN *The National Core Curriculum for Basic Education* Web Page)

[13] See "Email 3 from Finland" in APPENDIX 7 INTERNATIONAL EMAILS

A Closer Look at the Five Subject Areas of Mother Tongue, Mathematics, Social Studies, Science and Foreign Language

The more detailed supporting material for this section of the report may be accessed by following the appropriate links at the curriculum web page of each country (see reference list at the end of the report). Alternatively, direct links to all subjects & topics are available in *Appendix 6 International Curriculum*.

Mother Tongue. In NL "mother tongue" translates into English Language Arts of which the main strands are (i) Speaking & Listening, (ii) Reading & Viewing, and (iii) Writing & Other Ways of Representing. It is not surprising that these main ideas are the focus points in the other four jurisdictions. In fact, the presentation is virtually identical in NL, UK and SAu. That being said, there is some indication that in the UK there is more emphasis on drama and the actual development of the English language. Also, in both the UK and SAu documentation there is more overt reference to electronic/digital resources, although there may be no discernible differences in the actual delivery of the programs.

NZ documents are the most succinct in that there are only two main headings, although the sub-headings (in parentheses) once again show parallelism with the NL LA program. The headings and sub-headings are (i) Making Meaning of Ideas and Information (listening, reading, and viewing) and (ii) Creating Meaning (Speaking, Writing, and Presenting). As in SAu, it is English that receives the most prominence—however, in NZ there are two other official languages: Te reo Maori and New Zealand Sign Language (NZSL).

In FIN there are five official languages: Finnish, Swedish, Sami, Romany and Finnish Sign Language (FSL). Except for FSL these languages all follow five major strands: (i) Interaction Skills, (ii) Text Comprehension, (iii) Preparing Composition & Spoken Presentations, (iv) Information Management Skills, and (v) Relationship with Language, Literature & Other Cultures. The last of the strands illustrates an emphasis on literature that is not so apparent in the other jurisdictions. (Note that in the list of FIN subjects in PART A this subject area is called Mother Tongue *and Literature*.)

Mathematics. In NL, Mathematics has five strands: (i) Number Concepts/Number & Relationship Operations, (ii) Patterns & Relations, (iii) Shape & Space/Measurement, (iv) Shape & Space/Geometry, (v) Data Management & Probability.

While in the UK there is an economy of strands—those being (i) Number & Algebra, (ii) Shape, Space & Measures, and (iii) Handling Data—it can be seen from the strand titles that the NL and UK Mathematics content compares very well. In as much as the Mathematics strands in NZ are virtually identical to those of the UK, an identical statement can also be made when comparing the NZ and NL programs. A similar statement can be made regarding the Mathematics curriculum of SAu. However, it is interesting to note that in SAu the "Exploring, Analyzing & Modeling Data" is the first strand of the program, rather than the last.

Except for the third strand, there is an obvious familiarity in the FIN Mathematics:
(i) Numbers & Calculations, (ii) Algebra, (iii) Functions, (iv) Geometry, (v) Probability & Statistics. There is some question that the "Functions" strand of FIN, which includes *null points, largest & smallest value, increasing & decreasing functions*, goes a little beyond the NL Intermediate Mathematics program.[14] It is interesting to note that Finland is the only country in the sample which does not have "Measurement" as a discrete strand. Since much of measurement (by definition) has a process/action/ skill characteristic that is basic to other mathematic endeavours, there can be little doubt that students in Finland are being exposed to this strand even though it is not an overt one in the curriculum.

Social Studies. It will come as no surprise that there is a great variation in Social Studies content among NL and the Non-Canadian jurisdictions. In fact, even in NL there is no particular consistency across the Intermediate grades. Specifically, the Grade 7 course deals with the many facets of empowerment (economic, political, cultural, etc., all within the Canadian context), Grade 8 delivers a *History of Newfoundland and Labrador,* and Grade 9 has a social studies course which focuses on Atlantic Canada in the Global Community.

In the UK at the Key Stage 3 Level there are two separate programs: Geography and History. The Geography curriculum exposes students to (i) the notion of "place" from different points of view (local, regional, national, international, global), (ii) physical & human patterns & processes, and (iii) environmental change & sustainable development. In the process the students look at 2 countries with significantly different stages of economic development. The UK Key Stage 3 History course is intended to develop the students' appreciation/skills/ knowledge by having them do three British studies (Britain 1066-1500; Britain 1500-1750; Britain 1750-1900), a European study and two world studies (e.g., the World Wars, the Holocaust, the Cold War, and their

[14] However, an experienced NL mathematics teacher after looking at the FIN on-line documentation was unable to say for sure that this is indeed the case.

impact on Britain, Europe and the wider world). At first glance "social studies" in the UK may seem fairly onerous—however, it must be remembered that Key Stage 3 covers three years of schooling.

In SAu the "Standard 4" social studies is titled "Society and Environment". As the name suggests there is emphases on socio-economic issues, ecological sustainability, and the multicultural nature of Australia (with special reference to aboriginal issues). A most interesting modular topic integrated throughout SAu schooling is "Crime Prevention Education". As indicated earlier, Standard 4 is most probably equivalent to NL Grades 7 and 8 (that is, in the level of the curriculum, if not the content).

NZ Level 4 Social Studies has 5 strands: (i) Social Organization, (ii) Culture & Heritage (& the impact of technology), (iii) Place & Environment (& the interaction of people with the environment), (iv) Time, Continuity & Events (historical events), (v) Resources & Economic Activities. These general strands lead to the specific as the students learn about New Zealand peoples, cultures, and groups in various time and place settings.

Finland has an interesting Grade 7—9 social studies mix. First, there is a Geography program (*which is done in conjunction with the Biology program*) and deals with (i) Earth—the Human Being's Home Planet, (ii) Europe, (iii) Finland in the World, and (iv) the Common Environment (local & global concerns). Second, the History program parallels the Geography curriculum in that the students study about Finland and it's interactions with its European neighbours. The Industrial Revolution, two World Wars, and Finnish life to the beginning of the twentieth century have a prominent place in this history. The history program also includes a choice of an elective unit (e.g., evolution of equality; evolution of culture; development of technology; from the break-up of Europe to its reunification; one culture outside Europe.) In addition to Geography and History there is also a course actually called Social Studies offered in conjunction with the History program and covering the following topics:

1. The individual as a member of society
2. Welfare of the Individual
3. Exerting influence and decision-making
4. Security of the citizen
5. Managing one's finances
6. Economics
7. Economic policy.

Science. In NL, the Intermediate Science courses are comprised of 4 units, one of each related to: "Life Science", "Physical Science - Chemistry", "Physical Science - Physics", and "Earth and Space Science". With regard to the last unit, the “earth science” portion is covered in Grades 7 and 8 while the “space science” content is studied in Grade 9. In fact all four Atlantic provinces follow this pattern.

The Science curricula of the non-Canadian jurisdictions match that of NL to the extent that they cover the four major areas in the APEF documentation: Life Science, Chemistry, Physics, and Earth & Space Science. This parallelism is, in fact, a strong feature, and it is easier to point out a few minor discrepancies than to list many comparisons. For example:

- the UK Key Stage 3 has only 3 main headings (paralleling life science, chemistry, and physics) with “earth & beyond” being a sub-topic of the physics strand.

- while some of the four SAu Science strands are worded slightly differently from the 4 NL units (and listed in a different order), the whole of NL Intermediate Science content (i.e., Grades 7—9) presents a very good match. The same can be said for the NZ curriculum.

- In Finland there is an expanded list of topics under the main subject headings of biology, chemistry and physics. While “earth & space science” is conspicuously absent, all other headings and sub-headings are easily matched with those of NL.

An interesting feature of FIN Science documentation is that even though the discrete titles of Biology, Physics and Chemistry appear in levels as low as Grade 5, the courses are integrated with other courses or with each other in the National Basic Education Program. For example, in Grades 7—9, Physics and Chemistry are timetabled as one subject for delivery in the classroom. In fact, in Grades 5 and 6 the outcomes of these two subjects are presented together. Another interesting scheduling combination is Biology and Geography. Again, Biology and Geography outcomes are integrated in Grades 5 and 6.

Foreign Language. It should be pointed out that while the number of foreign languages varies greatly, the courses are generally organized around three main ideas: (i) understanding the language, (ii) using the language to communicate, and (iii) appreciating the culture that surrounds the language.

Generally speaking there are many more “foreign” languages in the curricula of non-Canadian jurisdictions. For example, in the UK, schools must offer one of

the 19 languages of the European Union. Schools, if they wish, may offer other foreign languages as well.

The SAu curriculum has three types of "foreign" language. The first two are (i) the alphabet languages (such as French and German) and (ii) the non-alphabet languages (such as Japanese and Chinese). Interestingly, the third subject area in the Australian "foreign language" documentation is Australian Indigenous Languages.

NZ offers foreign language instruction in Chinese, Japanese, French, German, and Spanish. The government offers support in the form of 5 National Advisors (one for each language) to aid teachers and students. As in SAu, there is some indication in the documentation that the non-English National languages, Te reo Maori and New Zealand Sign Language (NZSL), are taught as "foreign" languages to some students. As well, because of the NZ geographical location, the Pasifika languages have a special place in the curriculum.

It should come as no surprise that in Finland the main foreign language is English. Latin is also mentioned in the documentation. Other non-mother tongues are simply referred to as "other foreign languages", with the interesting inclusion of the mother tongue "Sami" as a foreign language for some students (an obvious parallelism to French being a "foreign" language for some NL students).

A Synthesis of Non-Canadian Documentation

A comparison of the Programs of Study of NL, UK, SAu, NZ and FIN permits the following observations:

- some subjects, although listed separately, are sometimes integrated with other courses. Examples of subjects that are integrated with other courses are ICT, career education, and sex education.
- in this small sample of non-Canadian jurisdictions there is near maximum variation on the treatment of Religious Studies. In UK and FIN the National Curriculum requires that schools provide Religious Education, with parents/guardians having the right to exempt their child; in SAu, RE is offered in "some non-government schools"; and in NZ the law requires New Zealand state primary schools to offer secular education. NZ School boards may choose, however, to allow volunteers to provide a limited amount of religious instruction at school. This especially applies to State Integrated Schools (i.e., schools formerly run by the church).
- "The Arts" generally go beyond visual arts & music to include drama and dance.
- *the Programs of Study indicate a great amount of similarity among the jurisdictions*, especially as far as several traditional or core subjects are concerned. Five such subjects in NL are English Language Arts, Mathematics, Social Studies, Science, and French. These subjects are in actuality like-named in all of the non-Canadian jurisdictions except Finland where there are 5 official languages, none of which is English.

It will be informative to briefly consider each of the five subjects mentioned above.

English Language Arts / Mother Tongue. Since English Language Arts is representative of the Mother Tongue of NL, UK, SAu, and NZ, and also to facilitate discussion, the NL LA strands are repeated here: (i) Speaking & Listening, (ii) Reading & Viewing, and (iii) Writing & Other Ways of Representing.

It was discovered that the LA strands of NL are virtually identical to those of UK and SAu, and to the sub-headings of NZ strands. In the case of FIN, the first 3 of its 5 strands match the NL strands. The remaining two of the Finnish strands overtly target ICT and literature. In both the UK and SAu documentation there

is a more direct reference to electronic/digital resources. Also, in the UK there is some indication that there is more emphasis on drama, and on the actual development of the English language.

Mathematics. In NL, Mathematics has five strands: (i) Number Concepts/Number & Relationship Operations, (ii) Patterns & Relations, (iii) Shape & Space/Measurement, (iv) Shape & Space/Geometry, (v) Data Management & Probability.

It only needs to be said that while the wording or order of the strands may be slightly different, there is good to excellent comparability among the jurisdictions as far as Grades 7—9 Mathematics is concerned.

Social Studies. There is a great variation in specific Social Studies content among NL and the Non-Canadian jurisdictions. Obviously, content differences are most pronounced where a course deals with a specific region as opposed to a course with more global themes. Still, there is always some similarity because the broad themes are constant—those being history, geography, and something akin to citizenship or civics. Because of this triple nature of the subject, sometimes a country (or even a grade level within a country) delivers one or more discrete courses and sometimes there is an integration of two or all three of the parts. Certainly, one of the least common integrations is Finland's geography/biology coupling.

Science. In NL the Intermediate Science courses are comprised of 4 units: Life Science, Chemistry, Physics, and Earth and Space Science. The "space science" portion of unit 4 is covered in Grade 9 only.

It is possible to very nearly match the NL Science program with the Science programs of the UK, SAu, NZ and FIN (except for the apparent absence of "earth & space science" in Years 7—9 of the Finnish Schools).

An interesting feature of FIN Science documentation is that even though the discrete titles of Biology, Physics and Chemistry appear in levels as low as Grade 5, the courses are integrated with other courses or with each other in the National Basic Education Program.

Foreign Language. Generally speaking there are many more "foreign" languages in the curricula of non-Canadian jurisdictions than in NL. Specifically, in the UK curriculum there are upwards to twenty so-called "foreign" languages, and a lesser number in SAu, NZ, and FIN. In more detail, the foreign language curricula are as follows:

- UK (19 languages of the European Union)
- SAu (French, German, Japanese, Chinese, plus Australian Indigenous Languages)
- NZ (Chinese, Japanese, French, German, Spanish plus certain Pasifika languages)
- FIN (English, Latin, plus the official language Sami).

It should be pointed out that while there is great variation in foreign languages, the courses are generally organized around three main ideas: (i) understanding the language, (ii) using the language to communicate , and (iii) appreciating the culture that surrounds the language.

Concluding Statement

It has already be pointed out that, except for Social Studies, the core course content across Canada has a consistent nature. It is also possible to make an overall concluding statement about the core subjects in the Non-Canadian jurisdictions: specifically, in NL, UK, SAu, and NZ, where English is the major mother tongue, and to a lesser extent in Finland (where it is a foreign language), it can be said that the content of Mathematics, Science and English Language Arts has a good degree of commonality. As for Social Studies (especially when content is country specific) and Foreign Language, it is possible to identify common thematic strands, but the content must, axiomatically, be different.

REFERENCES

Abraham, C. and Gram, J. (2007). *Student Assessment in B.C.'s Public Schools--A Guide for Parents.* Available at http://www.sd62.bc.ca/pdf/speac_student_assessment_guide.pdf

EQAO. (2008). *Administering the Grade 9 Assessment in Mathematic.* Available at http://www.eqao.com/pdf_e/07/07P094e.pdf

Government of Alberta, Department of Education. (2007-2008*)*. *Achievement General Information Bulletin.* Available at http://www.education.gov.ab.ca/k_12/testing/achievement/ach_gib/

Government of Alberta, Department of Education. *Alberta Education.* http://www.education.alberta.ca/teachers/core.aspx,

Government of Alberta, Department of Education. *Guide to Education.* education.alberta.ca/media/143960/hbk7p37.pdf).

Government of Alberta, Department of Education. *Programs of Study (Core Curriculum).* Available at http://www.education.alberta.ca/teachers/core.aspx

Government of British Columbia, Department of Education. *Learning Resources—Grade Collections.* Available at http://www.bced.gov.bc.ca/irp_resources/lr/resource/gradcoll.htm

Government of British Columbia, Department of Education. *Required areas of study.* Available at http://www.bced.gov.bc.ca/legislation/schoollaw/e/m295-95.pdf

Government of Finland. *Basic Education Act 628/1998 Amendments up to 1136/2004.*
Available at http://www.finlex.fi/en/laki/kaannokset/1998/en19980628.pdf

Government of Finland, Finnish National Board of Education. (2003). *Pre-School Education.* Available at http://www.oph.fi/english/pageLast.asp?path=447,4699,4848

Government of Finland, Finnish National Board of Education. (2004). *The National Core Curriculum for Basic Education.* Available at http://www.oph.fi/english/page.asp?path=447,27598,37840,72101,72106

Government of Finland, Ministry of Social Affairs & Health. (2002). *Early Childhood Education and Care in Finland*. Available at http://pre20031103.stm.fi/english/pao/publicat/earlychildhood/brochure02_3.htm

Government of New Brunswick, English Services Division. K-12 Curriculum Guides. Available at http://www.gnb.ca/0000/anglophone-e.asp#cd

Government of Newfoundland and Labrador, Department of Education. (1999). Assessing & Evaluating Student Learning. *Grade 7—9 Language Arts Curriculum Guide,* pp. 169, 176. Available at http://www.ed.gov.nl.ca/edu/sp/intermed/eng_lang_arts/gr7_9/ass_eval.pdf

Government of Newfoundland and Labrador, Department of Education. (2007-08). *Program of Studies—Intermediate*. Available at http://www.ed.gov.nl.ca/edu/sp/pos/2007-08/7-intermediate.pdf

Government of New Zealand, Ministry of Education. (2002). *A 10-year Strategic Plan for Early Childhood Education.* Available at http://www.minedu.govt.nz/web/downloadable/dl7648_v1/english.plan.art.pdf

Government of New Zealand, Ministry of Education. *Curriculum On-line.* Available at http://nzcurriculum.tki.org.nz/

Government of Nova Scotia, Department of Education and Culture. (1998). *Atlantic Canada in the Global Environment—Grade 9,* p. 106. Available at http://www.ednet.ns.ca/pdfdocs/curriculum/global-community.pdf

Government of Nova Scotia, Department of Education. *(*2003-04). *Program of Studies—Intermediate*. Available at http://www.ednet.ns.ca/pdfdocs/psp/psp_03_04_full.pdf

Government of Ontario, Ministry of Education. (2005). *Ontario Curriculum Grades 1—8 Mathematics*. Available at http://www.edu.gov.on.ca/eng/curriculum/elementary/math18curr.pdf

Government of Ontario, Ministry of Education. *Curriculum by Subject.* Available at http://www.edu.gov.on.ca/eng/curriculum/subjects.html

Government of Prince Edward Island, Department of Education. (2007-08). *Program of Studies—Intermediate*. Available at http://www.gov.pe.ca/educ/index.php3?number=74904&lang=E

Government of South Australia, Department of Education and Children's Services. *Curriculum and Learning*. Available at http://www.decs.sa.gov.au/

Government of South Australia, Department of Education and Children's Services. *Middle Years Program*. Available at http://www.middleyears.sa.edu.au/

Government of the United Kingdom. *National Curriculum on line.* Available at http://www.nc.uk.net/nc_resources/html/ks3and4.shtml

Western and Northern Canadian Protocol Curriculum Documents. Available at http://www.wncp.ca/

Intermediate Program Review

APPENDICES

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APPENDIX 1 GRADE 7 PROGRAM COMPARISON (CANADA)

APPENDIX 1 Grade 7 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
Grade 7 ALL Subjects taught	English Language Arts (20%) Mathematics (18%) Social Studies (10%) Science (10%) French (10%) (a 2002 document states 200 min/6days)[1] Religious Education (8%) Technology Education/Industrial Arts/Home Economics (8%) Physical Education (6%) Music and Art (5%) Health (5%) Also included is Enterprise Education which is meant to be a cross-curriculum endeavour (note no separate percentage allotment in the above list) Above information is from a "Program of Studies" dated **2007-2008**[2]	**Prince Edward Island** Language Arts (18 - 22%) Mathematics (18 - 22%) Social Studies (13 - 15%) Science (13 - 15%) Second official language (11 - 13%) Art, Music, Industrial Technology, Home Economics, etc. (7 - 13%) Physical Education (4 - 6%) Health Education (4 - 6%) Locally Determined Time (1 - 3%) CIT (Communications & Information Technologies) are integrated across the curriculum Above information is from a "Program of Studies" dated **2007-2008**[3] **Nova Scotia** Compulsory: French (or Mi'kmaw or Gaelic) Language Arts Mathematics Science Social Studies Health/Personal development and Relationships	The Arts (music, visual arts, drama, dance) French (core French, extended French) Health and Physical Education Language Mathematics Native Languages Science and Technology History Geography Documents have varying dates from **1998** (the arts and French) to **2006** (Language Arts)[6]	English Language Arts (1998) International Languages (2000) Mathematics (2006) Social studies (2002) Documents have varying dates from **1998** to **2006** (see above)[7] *Note no coverage of Science and French in the **WNCP** documentation. For these subjects AB and **BC** curriculum guides will be used. In addition to the "traditional" subjects (as listed for the other provinces above) , **Alberta** also offers so-called **complementary courses**: Career and Technol-ogy Studies; Environmental and Outdoor Education; Ethics (offered once in grades 7, 8, or 9); Fine and Performing Arts: Art, Drama, and/or Music (Choral, General, Instrumental); Aboriginal Languages (Blackfoot Language and Culture; Cree Language and Culture); French Alternative Language Programs; French as a Second Language; International Languages (Chinese, German, Italian, Japanese, Spanish, Ukrainian); Locally developed /Acquired and Locally Authorized Optional Courses; *Religious Studies: Religious studies may be offered at the discretion of the local*

APPENDIX 1 Grade 7 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		Physical Education Plus one elective: Art Family Studies Technical Education Music Above information is from a "Program of Studies" dated **(2003-2004)**[4] **New Brunswick** Art Health English Language Arts French Second Language (Core) French Second Language (Immersion) Music Guidance (Personal Development) Mathematics Physical Education Science Social Studies (Empowerment) Technology Education Documents have varying dates from **1995** (visual arts) to **2005**.[5]		*school board, under Section 50 of the School Act*.[8] In September **2006**, with the introduction of a second language requirement for all Alberta students, schools will have to begin offering a second language in grade 4. The language requirement will be phased in one year at a time until students reach grade 9 in 2011–12. In grade 10, students may choose to continue their studies in the second language that they selected in order to develop a higher level of language competency in the nine-year course sequence. For **British Columbia**[9] only items which are **different** are listed below: Dance is included in the Fine Arts; International languages include Korean, and Mandarin Chinese. The BC K to 12 Education Plan requires the integration of Information Technology K to 7 and 8 to 10 with other curricular areas. Information Technology 11 and 12 is a stand-alone course.[10]

APPENDIX 1 Grade 7 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
Grade 7 Comment on Whole Program	In NL industrial arts is being phased out in favour of technology education. The above cell suggests that students do one of tech ed and home economics; and one of music and art. Also, for the provinces covered, NL appears to be the only one with RE.	**PEI** In **PEI** (as in other mainland provinces investigated) there is no mention of religious education.) As a probable consequence, more time is available for LA, Math, SS and Sci. Art & music are grouped with industrial technology and home economics. Note also what appears to be 1--3% discretionary time. **NS** The above cell suggest that French does not take precedence over other non-English languages in **NS**. In addition to **NS** course content given in the cell above, the on-line documentation includes information on the following programs: (i) French as a second language, (ii) community-based education, comprehensive guidance and counseling, (iii) integration of IT with school programs and (iv) student assessment; and information on the following policies: advanced courses, local courses, independent study, racial equity, code of conduct, & special education.	In **ON**,"social studies" becomes history and geography in Grade 7. For comments on non-content features of the documentation see the discussion on the individual courses in the cells below. Grades 7 and 8 are "elementary grades" while Grade 9 is at the "secondary" level.	The **WNCP** "international languages" document covers languages other than Canada's two official languages. Note comment on AB Religious Education in the above cell. This appears to apply to Catholic schools in AL. No mention of Religious Education in **BC**.

APPENDIX 1 Grade 7 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		NB In **NB** Grade 7 (and 8) are "middle school" grades. Grade 9 is a HS grade. Documents on student assessment and student services are available on the web site given in the cell above.		
Grade 7 Main topics and general learning outcomes in **English Language Arts**	**(1999) NL Grade 7 English Language Arts**[11] (in ***Speaking and Listening***)--1. speak and listen, to explore, extend, clarify, and reflect; 2. communicate information and ideas effectively and clearly, and to respond personally and critically; 3. interact with sensitivity and respect; (*in* ***Reading & Viewing***)--1. select, read, and view with understanding a range of material; 2. interpret, select, and combine information using a variety of strategies, resources, and technologies; 3. respond personally and critically to a range of texts, applying their understanding of	**(2004) PEI Grade 7 English Language Arts**[12] Identical to NL. **(1997!) NS Grade 7 English Language Arts**[13] Identical to NL. **(2001) NB Grade 7 English Language Arts**[14] Identical to NL	**(2006) ON Grade 7 Language** ***Oral Communication***: [15] 1. listen-ing to understand; 2. speaking to communicate; 3. reflecting on oral communication skills and strategies; ***Reading***: 1. reading for meaning; 2. understanding form and style; 3. reading with fluency; 4. reflecting on reading skills and strategies; ***Writing*:** 1. developing and organizing content; 2. using knowledge of form and style in writing; 3. applying knowledge of lang-uage conventions and presenting written work effectively; 4. reflecting on writing skills and strategies ***Media Literacy***: 1. under-standing media texts;	**(1998) WNCP Grade 7 English Language Arts**[16]: Students will listen, speak, read, write, view, and represent to: 1. explore thoughts, ideas, feelings, and experiences; 2. comprehend and respond personally and critically to oral, print, and other media texts; 3. manage ideas and information; 4. enhance the clarity and artistry of communication; 5. celebrate and build community

APPENDIX 1 **Grade 7 Program Comparison (Canada)**

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	language, form, and genre; (*in* ***Writing & Other Ways of Representing***)--1. use writing and other forms of representation to explore, clarify, and reflect; 2. create texts collaboratively and independently; 3. use a range of strategies to develop effective writing and other ways of representing & to enhance clarity, precision & effective-ness.		2. understanding media forms, conventions, and techniques; 3. creating media texts; 4. reflecting on media literacy skills and strategies	

APPENDIX 1 Grade 7 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
Grade 7 Comments on **LA**	In **NL** continuity between grades is suggested because the Grade 7, 8, and 9 curriculum outcomes are covered in one document. In addition to the content given in the cell above, the document also deals with (i) meeting the needs of all students, (ii) a gender-inclusive curriculum, (iii) valuing social and cultural diversity, (iv) students with special needs (ESL, challenged, gifted), (v) different learning preferences (i.e., different intelligences), (vi) the learning environment and (vii) student assessment.		In **ON Grade 7** the outcomes related to **media** receive more emphases than in the other provinces. (In the Atlantic Provinces "media texts" are mentioned in a single objective). The Ontario document[17] also deals with the following topics: Student assessment; Instructional Approaches; Cross-Curricular and Integrated Learning; Students With Special Needs; English Language Learners; Antidiscrimination Education in the Language Program; Numeracy and Inquiry/Research Skills; The School Library; The Role of Technology; Guidance and Language Education; Health and Safety in Language Education.	The **WNCP LA** general outcomes seem to be quite "general". In fact the wording is consistent across all grades from K--12. Information taken from 1998 document
Grade 7 Main topics and general learning outcomes in **Mathematics**	**(2002) NL Grade 7 Mathematics**[18] (***Number Concepts/ Number and Relationship Operations***)--1. Students will demonstrate number sense and apply number-theory concepts; 2. Students will	**(2004) PEI Grade 7 Mathematics**[19] Identical to NL. **1999!) NS Grade 7 Mathematics**[20] Identical to NL**.** **(2002) NB Grade 7 Mathematics**[21]	**(2005) ON Grade 7 Mathematics**[22] (in ***Number Sense and Nume-ration***)--1. represent, compare, and order numbers, including integers; 2. demonstrate an understanding of addition and subtraction of fractions and integers, and apply a variety of	**(2006) WNCP Grade 7 Mathematics**[23] ***Number***--1. develop number sense; ***Patterns and Relations (Patterns)***--1. use patterns to describe the world and solve problems; ***Patterns and Relations (Variables and Equations***)-- 1. represent algebraic expressions in multiple ways; ***Shape and Space (Measurement***)--1. use direct or indirect measurement to solve problems; ***Shape***

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	demonstrate operation sense and apply operation principles and procedures in both numeric and algebraic situations. (***Patterns and Relations***)-- 1. Students will explore, recognize, represent, and apply patterns and relation-ships, both informally and formally; (***Measurement***)--1. students will demonstrate an under-standing of & apply concepts and skills associated with measurement; (***Shape & Space***)/(***Geometry***)-- 1. students will demonstrate spatial sense and apply concepts, properties and relationships; (***Data Management***)--1. students will solve problems involving collection, display and analysis of data; (***Probability***)--1. students will represent & solve problems involving uncertainty.	Identical to NL.	computational strategies to solve problems involving whole numbers and decimal numbers; 3. demonstrate an understanding of proportional relationships using percent, ratio, and rate; (in ***Measurement***)--1. report on research into real-life applications of area measurements; 2. determine the relationships among units and measurable attributes, including the area of a trapezoid and the volume of a right prism; (in ***Geometry and Spatial Sense***)--1. construct related lines, and classify triangles, quad rilaterals, and prisms; 2. develop an understanding of similarity, and distinguish similarity and con-gruence; 3. describe location in the four quadrants of a coor-dinate system, dilatate two-dimensional shapes, and apply transformations to create and analyse designs; (in ***Patterning and Algebra***)--1. represent linear growing patterns (where the terms are whole numbers) using concrete materials, graphs, and algebraic expressions; 2. model real-life linear	***and Space (3-D objects and 2-D shapes***)--1. describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them; ***Shape and Space (Transformations)***--1. describe and analyze position and motion of objects and shapes; ***Statistics and Probability (Data Analysis***)--1. collect, display and analyze data to solve problems; (***Chance and Uncertainty***)--1. use experimental or theoretical probabilities to represent and solve problems involving uncertainty

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
			relationships graphically and algebraically, and solve simple algebraic equations using a variety of strategies, including inspection and guess and check; (***in Data Management and Probability***)--1. collect and organize categorical, discrete, or continuous primary data and secondary data and display the data using charts and graphs, including relative frequency tables and circle graphs; 2. make and evaluate convincing arguments, based on the analysis of data; 3. compare experimental probabilities with the theoretical probability of an out-come involving two independent events	
Grade 7 Comments on **Mathematics**	Features of the NL documentation (other than the content outcomes of the above cell): the **guide** 1. invokes the philosophy and goals of *The Foundation for the Atlantic Canada Mathematics Curricu-lum*; 2. is based upon several key assumptions or beliefs about mathematics learning; 3. expresses the		The general headings or strands of **ON Grade 7 math** are virtually identical to those of the **Atlantic Provinces** (if not in the same order). However, there is an elaboration of each **ON strand** that is noticeably more detailed than that of the **Atlantic Provinces** and somewhat more detailed than that of **WNCP**. Pragmatically, this is only of importance	In the WNCP documentation the general objectives are not discriminating because the wording is the same across all grades from K-12, the one exception being that "chance and uncertainty" does not appear until Grade 5. In Summary it can be said that there is a sameness across the provinces as far as strands are concerned, these being: Numbers (number sense/numeration), Patterning (leading to algebraic expressions and equations), Spatial

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	unifying ideas of The NCTM *Curriculum and Evaluation Standards*; 4. stressses the need to deal success-fully with a wide variety of equity and diversity issues; 5. pro-motes the integrate mathema-tics and other subjects; 6. gives suggestions for designing an instructional plan. In NL there is a "Grade 7 Implementation" support document.		according to the extent that the specific learning outcomes have different degrees of specificity, which is probably not the case. Other topics in the **ON math** guide are as follows: The Mathematical Processes; Student Assessment; Teaching Approaches; Cross-curricular/Integrated Learning; Planning for Exceptional Students; ESL Students; Antidiscrimination Education in mathematics.	Sense (shapes, measurement, geometry), Data Management (statistics, probability, chance, uncertainty). Even where some incongruency might be suspected (e.g., "transformations" is specifically mentioned in ON and WNCP, but not in the Atlantic Provinces' general outcomes) a quick search of the specific outcomes shows that this topic is covered in all provinces.
Grade 7 Main topics and/or general learning outcomes in **Social Studies**	**(2006) NL Grade 7 Social Studies**[24] (all within the Canadian context) **Introduction to Empowerment** ***Economic Empowerment***--examine economic commodities, the traditional role of land and natural resources in economic empowerment and trends for future economic empowerment.; ***Political Empowerment--*** examine the political process and how political actions can lead to	**(2006) PEI Grade 7 Social Studies**[25] identical to NL **(2005) NS Grade 7 Social Studies** not available on-line but almost certainly identical to the other Atlantic Provinces (the title being given as "Atlantic Canada Social Studies Curriculum: Grade 7" [26] **(2005) NB Grade 7 Social Studies**[27] identical to PEI	**(2004) ON Grade 7 Social Studies**[28] **Grade 7 History** ***New France***--1. reasons why settlers came; the social, political, religious, and economic factors that shaped the colony; interaction with the First Nation peoples; 2. the physical, social, and economic challenges; 3.goals and interests of various groups in New France. ***British North America***--1. the origins of English settlement in B N A; the migration and settlement	**(2002) WNCP Grade 7 Social Studies**[29] **Canada a Country of the North** Summary--students will explore ***Canada's northern character***. They will consider contemporary and historical issues related to land and resource use, survival, and adaptation to the environment. This consideration will include an exploration of diverse cultural and artistic expressions of Canada's northernness. Students will examine ***intercultural contact***, the movement of indigenous peoples and immigrants, and the settlement of western and northern Canada. They will explore the ***settlement of diverse groups*** and will consider how

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	empowerment (stresses factors associated with Con-federation.). ***Cultural Empowerment***--examine the extent to which various cultural groups in Canada were red/disempowered (deals with Rebellions, Aboriginals, Immigrants); ***Societal Empowerment***--examine various groups within our society that have struggled to gain rights (life at turn of 20th Cen, effects of Indust. Revol, empowerment of women); ***National Empowerment***--explore how a country can be empowered and disempowered (international relations, WWI) Reflection--an understanding of empowerment in Canada to 1920.		experiences of the various groups of settlers; the War of 1812; 2. the beginnings and development of the new British colonies; 3. themes and personalities from the period, and their relevance to contemporary Canada. ***Conflict & Change***--1. the rebellions of 1837–38 in Upper and Lower Canada; 2. issues and conflicts in Upper and Lower Canada, and the attempts to resolve them; 3. methods of conflict resolution in both historical and contemporary situations. ONTARIO GRADE 7 GEOGRAPHY: ***The Themes of Geographic Inquiry***--1.location/place, environ-ment, region, interaction, and move-ment; 2. gather, process, and communicate geographic informa-tion; 3. current environmental issues from the perspective of the themes of geographic inquiry. ***Patterns in Physical Geography***-1. patterns in physical geography and the factors that produce them; 2. geographic information about the earth's physical features and patterns; 3. how patterns of	people changed and were changed by their environments over time. Students will also discover Canada's ***connections to other circumpolar regions***, including Alaska, Russia, Finland, Sweden, Norway, Iceland, Denmark, and Greenland. Through this inquiry into Canada's historical influences and northern connections, students will develop an under-standing of the complex nature of Canada's evolving identity.

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
			physical geography affect human activity around the world. ***Natural Resources***-- 1. managing, and using natural resources, and factors that affect the importance of those resources; 2. the distribution, use, and importance of natural resources; 3. positive and negative human effects on resource sustainability and the health of the environment.	
Grade 7 Comments on **Social Studies**	While the **NL** document is titled as being "interim", the documents suggest that the four **Atlantic Provinces** have identical Social Studies programs. Issues dealt with in the curriculum documents, but not in this file are: skills, inquiry processes, attitudes/values/ perspectives, student assessment, and the integration of technology into social studies learning.		**ON Social Studies** is presented as two distinct subjects in Grade 7 (**History** and **Geography**) Only knowledge based or content issues are covered in this file. The ON documents also deals with literacy/numer-acy/inquiry/ re-search and communication skills, student assessment, cross-curricular and integrated learning, current events, the accommodation of exceptional children, ESL students, antidiscrimination education in social studies, the role of technology, and health and safety in social studies. As well, Map, Globe, and Graphic Skills are included in the	Note that only "content" is dealt with in this file. The **WNCP** documentation goes into great detail with respect to outcomes relating to citizenship/identity, values and attitudes, and skills and processes.

APPENDIX 1 Grade 7 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
			Grade 7 Geography curriculum guide.	
Grade 7 Main topics and/or general learning outcomes in **Science**	**(1998!) NL Grade 7 Science**[30]: ***Interactions with Ecosystems***--1. components of an ecosystem; 2. energy flow in an ecosystem; 3. decomposers; 4. ecological succession; 5. environmental action (i.e., cod stocks, oil spills, acid rain, environmental groups. Note that in PEI "environmental" is not used in the title, but the intent is the same.) ***Physical Science: Heat***--1. temperature; 2. temperature and matter; 3 heat transfer; 4. specific heat; 5. temperature, heat and technology. ***Physical Science: Mixtures and Pure Substance***--1. the particle theory; 2. homogeneous and heterogeneous mixtures 3. solutions; 4. concentration of solutions; 5. solutions & solubility; 6. separating solutions; 7. distillation; 8. applications of mixture-science.	**(2004) PEI Grade 7 Science**:[31] ***Life Science-Interactions within Ecosystems***--1. components of an ecosystem; 2. food webs; 3. decomposers; 4. ecological succession; 5. Action ***Earth and Space Science: Earth's Crust***--1. geological plate tectonics and time scale; 2. rocks and minerals; 3. the rock cycle; 4. weathering; 5. soil ***Physical Science: Heat***--1. temperature; 2. temperature and matter; 3 heat transfer; 4. technology, temperature, and heat***. Physical Science: Mixtures and Solutions***--1. mixtures; 2. solutions; 3. Concentration of Solutions; 4. mixtures, solutions and the environment **(2001) NS Grade 7 Science** not available on-line but almost certainly identical to the other Maritime Provinces **2002) NB Grade 7 Science**[32]: identical to PEI	**(1998!) ON Grade 7 Science and Technology**[33]**:** **Life Systems—*Interactions Within Ecosystems***--1. interactions of plants, animals, fungi, and microorganisms; 2. interactions in an ecosystem; 3. effects of human & natural activities. **Matter & Materials—*Pure Substances and Mixtures***--1. mechanical mixtures and solutions and use in manufacturing; 2. human uses of mixtures and environmental impact Heat--1. molecular motion; 2. transfer of heat and its effects and uses; **Energy & Control—*Heat*—**1. molecular motion; 2. how heat changes substances, and the transmis-sion of heat; 3. applications of heat, & the effect on environments. ***Structural Strength and Stability***--1. effectiveness of structural forms & internal/exter-nal forces on them; 2. design and function; 3. factors affecting design ***The Earth's Crust***--1.composition of & change in the earth's crust; 2.	**WNCP Grade 7 Science** not available. **(2003)** Topics in **Alberta**[34]: 1. Interactions and Ecosystems; 2. Plants for Food and Fibre; 3. Heat and Temperature; 4. Structures and Forces; 5.Planet Earth **(2005)** Topics in **British Columbia**[35]: 1. Ecosystems (interconnected food webs, populations, communities, and ecosystems; healthy local ecosystems; human impact. 2. Chemistry (properties of matter; elements, compounds, and mixtures; pH, solubility, and concentration. 3. Earth's Crust (core, mantle, crust, formation of rocks,tectonic plate movement, time changes in earth's surface).

APPENDIX 1 **Grade 7 Program Comparison (Canada)**

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	Earth & Space Science—1. rocks & minerals; 2. rock cycle; 3. structure of the earth; 4. plate tectonics; 5. plate tectonics theory; 6. earthquakes, volcanoes, mountains; 7. geologic time scale; 8. weathering; 9. soil		formation of physical features; 3. decisions about land use	
Grade 7 Comments on **Science**	Grade 7, 8, & 9 new Intermediate science curricula is based on the Pan Canadian Framework and the CAMET (former APEF) framework, regionalized for NL. Notice that overall it is identical to PE & NB. Presumably the non-content material will match that off PE as indicated in the cell to the right. Even though "space science" is named in the above cell, this topic is not done until Grade 9. Old document information in blue: In the content segment of the **NL Grade 7 Science** there are "technology links"	The **PEI** document is much more elaborate than the NL one, suggesting that there may be a more up-to-date guide in NL As well. In the PEI guide there is also great detail on 1. the three processes of scientific literacy (inquiry, problem solving, decision making); 2. the different needs of learners; 3. assessment & evaluation; 4. science & technology; 5. skills; 6. attitudes.	Note the main difference between ON and NL is the extra strand "structural strength & stability" in ON. In **Ontario Science** (and **Technology**) the documentation from K--8 is organized first by strands. The strands then permeate all the grades. This at least ensures continuity as far as content is concerned. The guide also deals with attitudes in science and technology, communication skills, the use of computers, exceptional students, and safety. Note that the name of the program is Science and Technology. Taken from a 1998 document	**WNCP Science** not available. AB and BC done instead. The AB guide has the same "foundation" sections as the Atlantic Provinces: i.e., science/technology/society, knowledge, skills and attitudes. These four areas are expanded in detail. In BC, In addition to the content outcomes, students are required to set up an experiment to test a hypothesis. Also, models are required to illustrate scientific concepts and hypotheses. As in ON, the BC guide is organized first according to science topics, then by grades from K to 7.

APPENDIX 1 **Grade 7 Program Comparison (Canada)**

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	promoting the use of spreadsheets, databases, stop-action video, computer simulation programs, interface technology (e.g., motion sensors), video camera with microscopic adapter. The "introduction" segment gives much detail on the following issues: Outcomes related to the nature of science, science & techno-logy, & science, technology & society; science inquiry skills; problem solving skills, decision-making skills; the nature and needs of the adolescent/students with exceptionalities; instructional approaches; gender equity; student assessment.			
Grade 7 main topics and/or general learning outcomes in core **French**	**(2006) NL Grade 7 Core French**[36]: ***Communication***-- Students use French to establish and maintain relationships, to share ideas and opinions and to get things done; ***Culture***-- Students demonstrate a	**(2004)** All **PEI Grade 7 Core French**[37] documentation is written in French. **NS Grade 7 Core French** documents are written in French and also not available electronically.	**(1998) ON Grade 7 Core French**[39] has three Strands: 1. ***oral communiations*** (use compound sentences, speak in open-ended situations; respond to oral text; give oral presentation; make revisions to oral language). 2. ***reading*** (read at least 12 passages;	There are no on-line documents for **WNCP Grade 7 Core French**. Consequently AB and **BC** French programs are surveyed here**.** **Grade 7 AB French**[40]**:** On-line documents available in French only. **(2001) Grade 7 B C core French**[41]:

APPENDIX 1 **Grade 7 Program Comparison (Canada)**

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	knowledge of French-speaking cultures in Newfoundland and Labrador, Canada and other countries and an understanding of the links between language, culture and identity; ***General Language Education***--Students use language learning strategies enabling them to access information, clarify and negotiate meaning and cope effectively in unfamiliar situations in their first language as well as in French. Themes thoughout course: Family and Home, School, Leisure, Holidays and Travel	All **NB Grade 7 Core French**[38] documentation is written in French. Ironically the Foundation document for French Immersion is written in English.	convey understanding of written text; determine the meaning of what is read, express reaction to the text. 3. ***writing*** (write simple & compound sentences; use a variety of forms, e.g., letters, poems; revise and edit; learn and use vocabulary. All three strands are to include communicative activities with verbs, adjectives, oral questions, contractions, vocabulary, and spelling rules.	***Communicating***--1. ask for & give simple information; 2. exchange information about themselves; 3. participate in classroom activities; 4. begin to derive meaning in new language situations. ***Acquiring information***--1. extract and retrieve specific information from French-language resources to complete authentic tasks; 2. express acquired information in oral and visual forms. ***Experience Creative Works***--1. re-spond to creative works from the Franco-phone world . ***Understanding Cultural Influences***--1. identify elements of Francophone cultures present in British Columbia and Canada; 2. compare the daily lives of students in Canadian Franco-phone communities to their own lives
Grade 7 Comments on **French**	The strands of **NL Grade 7 French** are identical to the first three stands in the APEF document described in the cell to the right.	See a proposed common framework (2002) for Atlantic Provinces at http://www.ed.gov.nl.ca/edu/sp/foundations/core_french/orientation.pdf This is an "orientation" document which summarizes the French program in each Atlantic Province in the late 1990's and proposes common keystage outcomes. These	**ON French** documents were written in 1998. Although not obvious from the cell above, there is great detail on catering to special needs students. Also, in addition to the cognitive sphere, an aim is to develop an under-standing of the nature of the language, as well as an appreciation of French culture in Canada and in other parts of the	**WCNP** has a document entitled International languages which covers languages other than Canada's two official languages. Alberta documents are in French only. **British Columbia** documentation seems quite brief, the complete on-line information being given above. "Schools have the responsibility to ensure that all prescribed learning outcomes in each IRP are met; however, schools have flexibility in determining how delivery of the prescribed learning

APPENDIX 1 **Grade 7 Program Comparison (Canada)**

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		outcomes (for Grade 9) will be given in a separate file. The document proposes 4 strands: communication, culture, general language education, and language(linguistic elements). The limited abilities of this researcher allows the observation that **NB** (like **NL**) is following thee of the 4 strands proposed in the **APEF** document described in the **PEI** comment cell.	world. Native students may study their native language in lieu or in addition to French. Information taken from a 1998 document.	outcomes can best take place." http://www.bced.gov.bc.ca/irp/lo.htm

APPENDIX 2 GRADE 8 PROGRAM COMPARISON (CANADA)

APPENDIX 2 Grade 8 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
Grade 8 Subjects taught	Identical to **NL Grade 7 Program of Studies:** English Language Arts (20%) Mathematics (18%) Social Studies (10%) Science (10%) French (10%) Religious Education (8%) Technology Education/Industrial Arts/Home Economics (8%) Physical Education (6%) Music and Art (5%) Health (5%) Also included is Enterprise Education which is meant to be a cross-curriculum endeavour. Above information is from a "Program of Studies" dated 2007-2008[42]	**PEI Grade 8** Identical to **PEI Grade 7:** Language Arts (18 - 22%) Mathematics (18 - 22%) Social Studies (13 - 15%) Science (13 - 15%) Second official language (11 - 13%) Art, Music, Industrial Technology, Home Economics, etc. (7 - 13%) Physical Education (4 - 6%) Health Education (4 - 6%) Locally Determined Time (1 - 3%) CIT (Communications & Information Technologies are integrated across the curriculum) Above information is from a "Program of Studies" dated 2007-2008[43] **NS Grade 8** Identical to **NS Grade 7 Program of Studies** with the note that "health" is not mentioned but (as in Grade 7) "personal development & relationships" is.	Identical to **ON Grade 7:** The Arts (music, visual arts, drama, dance) French (core French, extended French) Health and Physical Education Language Mathematics Native Languages Science and Technology History Geography Documents have varying dates from 1998 (the arts and French) to 2006 (Language Arts)[46]	English Language Arts (1998) International Languages (2000) Mathematics (2006) Social studies (2002) Documents have varying dates from 1998 to 2006 (see above)[47] *Note no coverage of Science and French in the **WNCP** documentation. For these subjects AB and **BC** curriculum guides will be used. In addition to the "traditional" subjects (as listed for the other provinces above) , Alberta also offers so-called optional courses: Career and Technology Studies; Environmental and Outdoor Education; Ethics (offered once in grades 7, 8, or 9); Fine and Performing Arts: Art, Drama, and/or Music (Choral, General, Instrumental); Aboriginal Languages (Blackfoot Language and Culture; Cree Language and Culture); French Alternative Language Programs; French as a Second Language; International Languages (Chinese, German, Italian, Spanish, Ukrainian); Locally developed /Acquired and Locally Authorized Optional Courses. *Religious Studies: Religious studies may be offered at the discretion of the local school board,*

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		Compulsory: French (or Mi'kmaw or Gaelic) Language Arts Mathematics Science Social Studies Personal development and Relationships Physical Education Plus one elective: Art Family Studies Technical Education Music In addition, exploratory courses (or mini-courses) may be incorporated into existing courses to enrich the curriculum. Above information is from a "Program of Studies" dated (2003-2004)[44] **NB Grade 8** Identical to **NB grade 7**. Art Health English Language Arts French Second Language (Core)		*under Section 50 of the School Act.*[48] In September 2006, with the introduction of a second language requirement for all Alberta students, schools will have to begin offering a second language in grade 4. The language requirement will be phased in one year at a time until students reach grade 9 in 2011–12. In grade 10, students may choose to continue their studies in the second language that they selected in order to develop a higher level of language competency in the nine-year course sequence.

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		French Second Language (Immersion) music Guidance (Personal Development) Mathematics Physical Education Science Social Studies (Empowerment) Technology Education Documents have varying dates from 1995 (visual arts) to 2005.[45]		
Grade 8 Comment on Whole Program	Same as Grade 7: In NL industrial arts is being phased out in favour of technology education. The above cell suggests that students do one of tech ed and home economics. Also, for the provinces covered, NL appears to be the only one with RE. See several foundation documents at http://www.ed.gov.nl.ca/edu/sp/intermediate.htm	In **PEI** (as in other mainland provinces investigated) there is no mention of religious education.) As a probable consequence, more time is available for LA, Math, SS and Science. Art & music are grouped with industrial technology and home economics. Note also what appears to be 1--3% discretionary time. In **NS** The above cell suggest that French does not take precedence over other non-English languages in **NS**.	In **ON**,"social studies" becomes history and geography in Grade 7. For comments on non-content features of the documentation see the discussion on the individual courses in the cells below. Grades 7 and 8 are "elementary grades" while Grade 9 is at the "secondary" level.	The **WNCP** "international languages" document covers languages other than Canada's two official languages. Note comment on AB Religious Education in the above cell. This appears to apply to Catholic schools in AL. For **British Columbia**[49] only items which are **different** are listed below: International languages include Korean, and Mandarin Chinese. No mention of Religious Education in **BC**.

APPENDIX 2 Grade 8 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		In addition to **NS** course content given in the cell above, the on-line documentation includes information on the following programs: (i) French as a second language, (ii) community-based education, comprehensive guidance and counseling, (iii) integration of IT with school programs and (iv) student assessment; and information on the following policies: advanced courses, local courses, independent study, racial equity, code of conduct, & special education. In **NB** Grade 7 and 8 are "middle school" grades. Grade 9 is a HS grade Documents on student assessment and student services are available on the web site given in the cell above.		
Grade 8 Main topics and general learning outcomes in **English Language Arts**	**(1999!) NL Grade 8 LA**[50] identical to **NL Grade 7 LA** (in ***Speaking and Listening*****)**--1. speak and listen, to explore, extend, clarify, and reflect; 2. communicate information and ideas effectively and	**(2004) PEI Grade 8 LA**[51] identical to **NL Grade 8 LA** **(2000) NS Grade 8 LA**[52] identical to **NL Grade 8 LA** It should be noted that, when known, the on-line date is	**(2006) ON Grade 8 LA**[54] identical to **ON Grade 7 LA:** ***Oral Communication***: 1. listening to understand; 2. speaking to communicate; 3. reflecting on oral	**(1998) WNCP Grade 8 English Language Arts**:[55] Students will listen, speak, read, write, view, and represent to: 1. explore thoughts, ideas, feelings, and experiences; 2. comprehend and respond personally and critically to oral, print, and other media texts; 3. manage ideas and information; 4.

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	clearly, and to respond personally and critically; 3. interact with sensitivity and respect; (*in* ***Reading & Viewing***)--1. select, read, and view with understanding a range of material; 2. interpret, select, and combine information using a variety of strategies, resources, and technologies; 3. respond personally and critically to a range of texts, applying their understanding of language, form, and genre; (*in* ***Writing & Other Ways of Representing***)--1. use writing and other forms of representation to explore, clarify, and reflect; 2. create texts collaboratively and independently; 3. use a range of strategies to develop effective writing and other ways of representing & to enhance clarity, precision & effective-ness.	given (see parentheses above). Sometimes this date is more recent than the printed date on the document. **(2001) NB Grade 8 LA**[53] identical to **NL Grade 8 LA**	communication skills and strategies; ***Reading***: 1. reading for meaning; 2. understanding form and style; 3. reading with fluency; 4. reflecting on reading skills and strategies; ***Writing*****:** 1. developing and organizing content; 2. using knowledge of form and style in writing; 3. applying knowledge of lang- uage conventions and presenting written work effectively; 4. reflecting on writing skills and strategies ***Media Literacy***: 1. under-standing media texts; 2. understanding media forms, conventions, and techniques; 3. creating media texts; 4. reflecting on media literacy skills and strategies	enhance the clarity and artistry of communication; 5. celebrate and build community
Grade 8 Comments on **LA**	**NL Grade 8** comment is identical to **Grade 7** comment: In **NL** continuity between grades is suggested	**PEI Grade 8 LA** comment identical to **NL Grade 8 LA** comment in the cell to the left. **NS Grade 8 LA** comment	In **ON Grade 8** the outcomes related to **media** receive more emphases than in the other provinces. (In the	The **WNCP LA** general outcomes seem to be quite "general". In fact the wording is consistent across all grades from K—12

APPENDIX 2 Grade 8 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	because the Grade 7, 8, and 9 curriculum outcomes are covered in one document. In addition to the content given in the cell above, the document also deals with (i) meeting the needs of all students, (ii) a gender-inclusive curriculum, (iii) valuing social and cultural diversity, (iv) students with special needs (ESL, challenged, gifted), (v) different learning preferences (i.e., different intelligences), (vi) the learning environment and (vii) student assessment. 1999 document used for above information. The date when put on line is not given.	identical to **NL Grade 8 LA** comment in the cell to the left. **NB Grade 8 LA** comment identical to **NL Grade 8 LA** comment in the cell to the left. It should be noted that in **NB**, Grade 6, 7, and 8 are considered to be Middle School Grades.	Atlantic Provinces "media texts" are mentioned in a single objective). The Ontario document[56] also deals with the following topics: Student assessment; Instructional Approaches; Cross-Curricular and Integrated Learning; Students With Special Needs; English Language Learners; Antidiscrimination Education in the Language Program; Numeracy and Inquiry/Research Skills; The School Library; The Role of Technology; Guidance and Language Education; Health and Safety in Language Education.	Information taken from 1998 document
Grade 8 Main topics and general learning outcomes in **Mathematics**	**(2002) NL Grade 8 Math**[57] identical to **NL Grade 7 Mathematics:** (***Number Concepts/ Number and Relationship Operations***)--1. Students will demonstrate number sense and apply number-theory	**(2005) PEI Grade 8 Math**[58] identical to **NL Grade 8 Mathematics** (see cell to the left) **(1999) NS Grade 8 Math** not available to download. **(2007) NB Grade 8 Math**[59]	(2005) While the **ON Grade 8 math** headings are the same as those of **ON Grade 7 math**, the specifics are not.[60] See below: ***Number Sense and Numeration***: representing	**(2006) WNCP Grade 8 math**[61] is identical to **WNCP Grade 7** math: ***Number***--1. develop number sense; ***Patterns and Relations (Patterns)***--1. use patterns to describe the world and solve problems; ***Patterns and Relations (Variables and Equations***)--1. represent algebraic expressions in

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	concepts; 2. Students will demonstrate operation sense and apply operation principles and procedures in both numeric and algebraic situations. (***Patterns and Relations***)--1. Students will explore, recognize, represent, and apply patterns and relation-ships, both informally and formally; (***Measurement***)--1. students will demonstrate an understanding of & apply concepts and skills associated with measurement; (***Shape & Space***)/(***Geometry***)--1. students will demonstrate spatial sense and apply concepts, properties and relationships; (***Data Management***)--1. students will solve problems involving collection, display and analysis of data; (***Probability***)--1. students will represent & solve problems involving uncertainty.	identical to **NL Grade 8 Mathematics** (see cell to the left)	and ordering rational numbers; using exponential notation; solving multi-step problems involving whole numbers and decimals; multiplying and dividing fractions and integers; multiplying and dividing decimals by powers of ten; applying order of operations in expressions with brackets and exponents; solving problems involving percents to one decimal place and percents greater than 100; solving problems involving rates and proportions. ***Measurement***: converting between cubic cm and cubic m and between ml and cubic cm; developing circumference and area relationships for a circle; developing and applying the formula for the volume of a cylinder; determining and applying surface-area relationships for cylinders. ***Geometry and Spatial Sense***: sorting quadrilaterals by geometric properties	multiple ways; ***Shape and Space (Measurement***)--1. use direct or indirect measurement to solve problems; ***Shape and Space (3-D objects and 2-D shapes***)--1. describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them; ***Shape and Space (Transformations)***--1. describe and analyze position and motion of objects and shapes; ***Statistics and Probability (Data Analysis***)--1. collect, display and analyze data to solve problems; (***Chance and Uncertainty***)--1. use experimental or theoretical probabilities to represent and solve problems involving uncertainty

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
			involving diagonals; constructing circles; investigating relationships among similar shapes; determining and applying angle relationships for parallel and intersecting lines; relating the numbers of faces, edges, and vertices of a polyhedron; determining and applying the Pythagorean relationship geometrically; plotting the image of a point on the coordinate plane after applying a transformation. ***Patterning and Algebra***: representing the general term in a linear sequence, using one or more algebraic expressions; translating statements, using algebraic equations; finding the term number in a pattern algebraically when given any term; solving linear equations involving one variable terms with integer solutions using a "balance" model. ***Data Management and Probability***: collecting	

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
			categorical, discrete, and continuous data; organizing data into intervals; displaying data using histograms and scatter plots; using measures of central tendency to compare sets of data; comparing two attributes using data management tools; comparing experimental and theoretical probabilities; calculating the probability of complementary events.	
Grade 8 Comments on **Mathematics**	Wording is identical to Grade 7 comment (including a reference to "Grade 8 Math support documents"): Features of the NL documentation (other than the content outcomes of the above cell): the **guide** 1. invokes the philosophy and goals of *The Foundation for the Atlantic Canada Mathematics Curriculum*; 2. is based upon several key assumptions or beliefs about mathematics learning; 3. expresses the unifying ideas of The NCTM *Curriculum and Evaluation*	**PEI Grade 8 math** comment is identical to **NL Grade 8 math** comment. The **NS Grade 8 math** title, however, is identical to that of all previous Atlantic mathematics documents, leading one to suspect that NS Grade 8 math is identical to Grade 8 math in the other Atlantic Provinces.	The general headings or strands of **ON Grade 8 math** are virtually identical to those of the **Atlantic Provinces** (if not in the same order). However, there is an elaboration of each **ON strand** that is noticeably more detailed than that of the **Atlantic Provinces** and somewhat more detailed than that of **WNCP**. Pragmatically, this is only of importance according to the extent that the specific learning outcomes have different	In the WNCP documentation the general objectives are not discriminating because the wording is the same across all grades from K-12, the one exception being that "chance and uncertainty" does not appear until Grade 5. In Summary it can be said that there is a sameness across the provinces as far as strands are concerned, these being: Numbers (number sense/numeration), Patterning (leading to algebraic expressions and equations), Spatial Sense (shapes, measurement, geometry), Data Management (statistics, probability, chance, uncertainty).

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	Standards; 4. stress-ses the need to deal success-fully with a wide variety of equity and diversity issues; 5. pro-motes the integrate mathematics and other subjects; 6. gives suggestions for designing an instructional plan; 7. has section on student assessment. Above information on NL grade 8 math taken from an "interim" document. *In **NL** there is a "Grade 8 Support Materials" document.*		degrees of specificity, which is probably not the case. Other topics in the **ON math** guide are as follows: The Mathematical Processes; Student Assessment; Teaching Approaches; Cross-curricular/Integrated Learning; Planning for Exceptional Students; ESL Students; Antidiscrimination Education in mathematics.	Even where some incongruency might be suspected (e.g., "transformations" is specifically mentioned in ON and WNCP, but not in the Atlantic Provinces' general outcomes) a quick search of the specific outcomes shows that this topic is covered in all provinces.
Grade 8 Main topics and/or general learning outcomes in **Social Studies**	**(2005) NL Grade 8 Social Studies**[62]: **Newfoundland and Labrador History--**This course introduces students to the study of the history of the province from the turn of the 19th century to the present. ***History as a Lens to the Past***—1. an understanding and appreciation of history; 2. how to find out about the past. ***NL from the turn of the 19th***	(September 2006) **PEI Social Studies**--**Canadian Identity**[63]**:** ***Exploring Canadian Identity***—1. How artistic and literary expression reflects the following aspects of Canadian identity: landscape, climate, history, people-citizenship, and related challenges and opportunities. ***Geographic Influences***—1. The basic features of Canada's landscape and climate; 2.	**(2004) On Grade 8 Social Studies: History**[65] ***Confederation***—1. the internal and external political factors, key personalities, significant events, and geographical realities that led to the creation of the Dominion of Canada in 1867, and to the growth of Canada; 2. the needs and challenges that led to the	**(2002) WNCP Grade 8 Social Studies Exploring Worldviews of the Past**[66] Summary—Grade 8 students will explore ***worldviews of past societies*** and connections between the past and the present. Students will consider ***how worldviews are shaped*** and how they are expressed by people living in particular times and places. They will examine issues related to ***contact between societies with differing worldviews***. Students will explore diverse sources of historical information, including oral histories,

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	Century through the Early 20th Century –1. the Aboriginal peoples who lived in NL in the 19th century; 2. the groups who came to settle in NL in the 19th century; 3. the economic context of lifestyles of NL peoples in the 19th century; 4. the political context and challenges in NL in the 19th century; 5. peoples in NL in the 19th century. ***NL from 1914 through 1949***—1. the role that NL played in World War I; 2. the impact of the growth of a land-based economy on NL; 3. coping with challenges and disas-ters; 4. the impact of political events of the1930s; 5. the im-pact of World War II on NL. ***Newfoundland and Labrador through the 2nd Half of the 20th Century***—1. the process where-by NL entered into confederation with Canada; 2. economic changes in post-confederation NL up to 1971; 3. social changes in post-confederation NL; 4. the economic developments and issues that NL experienced	Effects of selected geographic factors on Candian identity; 3. The nature of migration and its impact on post-1920 Canada; 4. the effect of geographic features on the development of Canada and of a selected similar country. ***Decades of Change***—1. The impact of changing technology and socioeconomic conditions in the 1920s and 1930s; 2. Canada's participation in WWII; 3. the effect of WWII; 4. Canada's role in the world since WWII; 5. the impact of changing technology and socioeconomic conditions in the 1950s and 1960s; 6. social and cultural trends in Canada in the 1950s, 1960s and 1970s; 7. how globalization has affected Canada and Canadians since 1980. ***Citizenship***—1. age-appropriate actions that demonstrate the rights and responsibilities of citizenship (local, national and global); 2. how citizenship has evolved over time; 3. the structure and operation of government in Canada under a federal system; ***Reflections on Canadian Identity*** –1. Portray	formation and expansion of the Canadian federation; 3. compare Canada as it was in 1867 to the Canada of today. ***The Development of Western Canada***—1. the settlement and development of the Prairie provinces, British Columbia, and Yukon, and the effects on various groups of people; 2. conflicts and changes that occurred during the development of western Canada; 3. how the history of the Canadian west has influenced both artistic/ imaginative works institutions. ***Canada: A Changing Society***— 1. key characteristics of Canada between 1885 and 1914, including social and economic conditions, the roles and contributions of various people and groups, internal and external pressures for change, and the political responses to these pressures; 2, the factors	images, literature, and the arts. Through this inquiry into past societies, ***students will reflect upon their own world views***, assess the influences of the past on the present, and further develop their historical consciousness. Students will explore a historical ***indigenous society*** of North America, as well as Mesopotamia or Ancient Egypt; Ancient Greece or Rome; Aztec, Incan, or Mayan civilizations; Medieval Europe or Renaissance Europe; Ancient China or Japan.

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	at the close of the 20th century; 5. social changes and issues that NL experienced at the close of the 20th century. ***History as a Story of the Past in the Present***—1. the role of history in shaping our current circum-stances.	an under-standing of Canadian identity. **(2006) NS Grade 8 Social Studies** not available for download. **(1998 document with an on-line date of 2002) NB Grade 8 Social Studies**[64] **ATLANTIC CANADA IN THE GLOBAL COMMUNITY** ***Physical Setting***—1. the Atlantic region in the Canadian, North American, and global Contexts; 2. the area, size, and physical features of Atlantic Canada; 3. weather and climatic patterns; 4. link human activity to the natural resources; 5. population and settlement pattern… from Aboriginal to early new-world migration to the present day. ***Culture***—1. a general concept of culture; 2. contemporary culture in the Atlantic Canadian context and its connections to other global cultures; 3. local and global factors that have shaped the culture(s); 4. the nature of cultural, ethnic, and linguistic	that shaped Canada as it was entering the twentieth century; 3. comparison of living and working conditions, technological developments, and social roles near the beginning of the twentieth century with similar aspects of life in present-day Canada. **ON Grade 8 Geography** ***Patterns in Human Geography***—1. the main patterns of human settle-ment and the factors that influence population distribution and land use; 2. patterns in human geography; 3. Comparison of living and working conditions in countries with different patterns of settlement, and an examination of how demographic factors could affect students' lives in the future. ***Economic Systems***— 1. the characteristics of different types of economic systems and the factors that influence them; 2. geo-graphic information about	

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		groups; 5. cross-cultural understanding at the local, regional, and global levels; 6. culture and occupations/ life-styles; 7. global forces that cause cultures to constantly change; 8. shape political culture by exercising power and influencing political decisions. ***Economics***—1. role that basic economic principles play in daily life, 2. the role of economics in society; 3. the importance of economics in Entrepreneurship; 4. the contribution of the primary, secondary, tertiary, and quaternary sectors of the economy; 5. local, regional, and global economic patterns and related issues; 6. trade and other economic linkages. ***Technology***—1. techno-logy its regional and global appli-cations; 2. the historical application of technology; 3. how technology has affected employment and the standard of living 4. how technology affects transportation and communi-	regional, national, and international economic systems; 3. comparison of the economies of different communities, regions, or countries, including the influence of factors such as industries, access to resources, and access to markets. ***Migration***— 1. factors that affect migration and mobility, patterns and trends of migration in Canada, and the effects of migration on Canadian society; 2. migration and its effects on people and communities; 3. connection between the real experiences of Canadians and information about the causes and effects of migration.	

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		cations; 5. the effects of technology on manufacturing in the Atlantic region; 6. effect of technology on resource industries 7. the effects of technology on recreation, home life, and community life. ***Interdependence***—1. world view and the factors that influence and are influenced by it; 2. how Atlantic Canadians are members of the global community through different interconnected systems; 3. individual qualities and attributes Atlantic Canadians need to become contributing members of the global community; 4. the future well-being of Atlantic Canada involves cooperation with the national and global communities.		
Grade 8 Comments on **Social Studies**	Note that while the **NL Grade 8 History** course upholds the concepts and ideas articulated in the ***Foundation for the Atlantic Canada Social Studies***, it does depart from the more general name of "social studies". The guide	It's interesting to note how the Grade 8 Social Studies of **PEI** parallels the History course of NL—the former at the national level and the latter at the provincial level. Issues dealt with in the curriculum documents, but not	**ON Social Studies** is presented as two distinct subjects in Grade 8 (**History** and **Geography**) Only knowledge based or content issues are covered in this file. The ON documents also deals with literacy / numer-	Note that only "content" is dealt with in this file. The **WNCP** documentation goes into great detail with respect to outcomes relating to citizenship/identity, values and attitudes, and skills and processes.

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	promotes awareness of student diversity by highlighting the need to recognize and accommodate the varied learning styles, multiple intelli-gences, and abilities of individual students. Examples of techno-logy integration are mentioned. Each unit *begins* with a "skills overview" and a section of the document covers student assessment. Information from an "interim edition"	in this file are: skills, inquiry processes, attitudes/values/ perspectives, student assessment, and the integration of technology into social studies learning. In **NB** It should be noted that the above information is from a 1998 document. More recent curriculum documents acknowledge the involvement of NB educators, a fact which indicates NB's curriculum (and quite likely that of NS) are identical to PEI.	acy/inquiry/ research and communication skills, student assessment, cross-curricular and integrated learning, current events, the accommodation of exceptional children, ESL students, antidiscrimination education in social studies, the role of technology, and health and safety in social studies. As well, Map, Globe, and Graphic Skills are included in the Grade 8 Geography curriculum guide.	
Grade 8 Main topics and/or general learning outcomes in **Science**	**(1998) NL Grade 8 Science[67]:** **Earth & Space Science** ***Water Systems on Earth***—1. the water cycle; 2. oceans control the water cycle; 3. ocean climate & species distribution (note fewer sub-heading than PE, but a check shows identical coverage) **Physical Science:** ***Optics***—1. the history of light 2. properties of visible light; 3. electro-magnetic	**(2004) PEI Grade 8 Science[68]—Earth & Space Science**: ***Water Systems on Earth***—1. waves, tides & inter-action with shorelines; 2. water action erosion and deposition; 3. ocean basins & and continental drainage systems; 4. ocean currents, winds, and regional climates; 5. productivity and water species distribution; 6. glaciers and polar icecaps, and the environment.	**(1998) ON grade 8 Science & Technology[71]: Life Systems--*Cells, Tissues, Organs, and Systems*** –1. structure and function of plant and animal cells, and hierarchical organization of cells; 2. basic & specialized cellular processes; 3. the structure, function, and interdependence of human organ & improve-	**(2003) AB Grade 8 Science[72]**: ***Mix and Flow of Matter***—1. fluids in everyday life experiences; 2. composition & properties of fluids; 3. technologies based on the properties of fluids. ***Cells and Systems***—1. structure, function & organization of living things; 2. the role of cells; 3. body systems and their reaction to stimuli; 4. scientific investigations leading to new knowledge and medical applications. ***Light and Optical Systems***—1. the nature of light & vision, optical instruments; 2. transmission of light; 3.

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	radiation & dispersion; 4. laws of reflection & applications; 5. refraction ***Fluids***—1. viscosity; 2. density 3. forces & buoyancy; 4. pressure, hydraulics & pneumatics; 5. pres-sure, volume, and temperature; (note fewer sub-heading than PE, but a check shows identical coverage) **Life Science**: ***Cells, Tissues, Organs, and Systems***—1. cells; 2. interdependence among cells, tissues, organs, systems; 3. healthy & unhealthy systems; 4. interdependence of body systems. (note fewer sub-heading than PE, but a check shows identical coverage)	**Physical Science:** ***Optics***—1. properties of visible light; 2. laws of reflection & applications; 3. refraction; 4. electromagnetic radiation; 5. properties of electro-magnetic radiation. ***Fluids***—1. the particle model; 2. density; 3. temperature, density; & the particle model. 4. density changes in daily life experiences; 5. balanced & unbalanced forces; 6. mass & weight; 6. force, area, & pressure; 7. pressure, volume, and temperature; 8. viscosity. **Life Science**: ***Cells, Tissues, Organs, and Systems***—1. the cell is a living system; 2. growth & reproduction & cell division; 3. plant and animal cells; 4. needs and functions of var-ious cells & the needs and functions of the human organism as a whole; 5. cells, tissues, organs and systems ; 6. human respiratory, circulatory, digestive, excretory, & nervous systems; 7. the	ments in human health. **Matter & Materials—*Fluids***—1. the properties & the buoyant force of fluids; 2. design and construct pneumatic or hydraulic systems; 3. properties of fluids and the effect on organisms in the natural world; 4. technological devices that make use of fluid properties. **Energy & Control—*Optics***—1. electromagnetic radiation; 2. reflec-tion and refraction & optical devices; 3. applications of light. **Structures & Mechanisms—*Mechanical Efficiency***—1. the efficient operation of mechanisms and systems; 2. design, make & investigate the efficiency of the mechanical devices; 3. factors that can affect the manufacturing of a product. **Earth & Space Systems—*Water Systems***—1. earth's water systems and	image formation & vision & related technologies. ***Mechanical Systems***—1. the evolution of mechanical devices; 2. structure & function of machines; 3. the transmission of force & energy between the parts of a mechanical system; 4. mechanical devices in social & environmental contexts. ***Freshwater and Saltwater Systems***—1. water in the local and global community; 2. link-ages among landforms, water and climate; 3. species distribution and productivity; 4. human impact & the role of science & technology **(2006) BC Grade 8 Science[73]:** **Life Science—*Cells and Systems* —**1. characteristics of living things; 2. the main features, properties & functions of cells; 3. cells, tissues, organs, and organ systems; 4. the immune system, & the primary, secondary, and tertiary defence systems **Physical Science: *Optics***—1. the behaviour of waves; 2. visible light; 3. other types of electromagnetic radiation; 4. human vision. **Physical Science**: ***Fluids and Dynamics***—1. concept of force; 2. the kinetic molecular theory & solids, liquids, and gases; 3. density; 4. pressure, temperature, area, and

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		interdependence of various systems of the human body. **(2001) NS Grade 8 Science is identical to PEI & NB Grade 8 Science**[69] **(2002) NB Grade 8 Science is identical to PEI & NS Grade 8 Science**[70]	climate and weather; 2. major features of the earth's water resources and the effects on global climate and ecosystems; 3. human use and management.	force in fluids; 5. natural and constructed fluid systems . **Earth and Space Science**: ***Water Systems on Earth***—1. ocean salinity and temperature; 2. how water and ice shape the landscape; 3. factors that affect productivity and species distribution in aquatic environments.
Grade 8 Comments on **Science**	Virtually identical to other Atlantic Provinces. The new NL Intermediate science curricula is based on the Pan Canadian Framework and the CAMET (former APEF) framework, regionalized for NL. See comment in the cell to the right.	**PEI:** Much more than content is covered in the documentation. For example: catering to different needs, student assessment, attitude outcomes, and recommended videos. **NS:** See comment above. **NB**: See comment above.	Note the main difference between ON and NL is the extra strand "structural & mechanisms" in ON. In **Ontario Science** (and **Technology**) the documentation from K--8 is organized first by strands. The strands then permeate all the grades. This at least ensures continuity as far as content is concerned. The guide also deals with attitudes in science and technology, communication skills, the use of computers, exceptional students, and safety. Note that the name of the program is Science and Technology.	The AB **Grade 8 Curriculum Guide** has detailed discussion on the following issues: science, technology and society, skills, attitudes, nature of science, and the environment. While the **BC Grade 8 Science** on-line document is a "bare-bones" presentation, there is brief mention made of the following topics: the cognitive, affective and psychomotor domains, and outcomes related to the processes of science. Reference is made to student assessment in another document.

APPENDIX 2 Grade 8 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
Grade 8 main topics and/or general learning outcomes in core **French**	**(2007) NL Grade 8 French**[74] general headings are identical to those of Grade 7.	**(2003)** All **PEI Grade 8 Core French** documentation is written in French[75] **(1999)** All **NS Grade 8 Core French** documentation is written in French and not available on-line. **(2004) NB Grade 8 Core French**[76] documentation is written in French. Ironically the Foundation document for French Immersion is written in English.	**(1998!) ON Grade 8 Core French**[77] has 3 strands: ***Oral communication***—1. speak in compound and complex sentences; 2. respond to oral texts; 3. use language appropri-ately in a variety of situations. ***Reading***—1. read & comprehend at least 15 simple texts; 2. respond appropriately to a written text ***Writing***—1. use simple and compound sentences, and organize information in paragraphs; 2. use strategies to plan and write first and final drafts in guided and cooperative writing tasks; 3. produce pieces of writing in a variety of simple forms.	There are no on-line documents for **WNCP Grade 8 Core French**. Consequently AB and **BC** French programs are surveyed here**.** **Grade 8 AB Core French**[78]**:** On-line documents available in French only. **(2001) Grade 8 B C core French**:[79] ***Communicating***—1. ask for information, permission, and clarification; 2. share information about activities and interests; 3. participate in familiar activities classify events as past, present, or future; 4. derive meaning in new language situations. ***Acquiring Information***—1. ex-tract, retrieve, and process specific information from French-language resources; 2. express acquired information in oral, visual, and written forms. ***Experience Creative Works***—1. respond to authentic creative works from the Francophone world. ***Understanding Cultural Influ-ences***—1. identify elements of Francophone cultures in Canada and the world; 2. identify and compare the activities and interests of young people in Francophone communities to their own.

APPENDIX 2 Grade 8 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
Grade 8 Comments on **French**	Based on the APEF Document (see cell to the right)	See a proposed common framework **(2002)** for Atlantic Provinces core French at http://www.ed.gov.nl.ca/edu/sp/foundations/core_french/orientation.pdf This is an "orientation" document which summarizes the French program in each Atlantic Province in the late 1990's and proposes common keystage outcomes. These outcomes (for Grade 9) will be given in the Grade 9 file. The document proposes 4 strands: communication, culture, general language education, and language(linguistic elements). **NS**: See comment above. **NB**: See comment above.	The information in the cell above is all the on-line information that could be found on the "content" of Grade 8 Core French. Although not obvious from the cell above, there is great detail on catering to special needs students. Also, in addition to the cognitive sphere, an aim is to develop an under-standing of the nature of the language, as well as an appreciation of French culture in Canada and in other parts of the world. Native students may study their native language in lieu or in addition to French. Since this is a 1998 document, it's quite possible that revisions have been made.	**WCNP** has a document entitled International languages which covers languages other than Canada's two official languages. Alberta documents are in French only. **British Columbia** documentation seems quite brief, the complete on-line information being given above. "Schools have the responsibility to ensure that all prescribed learning outcomes in each IRP are met; however, schools have flexibility in determining how delivery of the prescribed learning outcomes can best take place." http://www.bced.gov.bc.ca/irp/lo.htm

APPENDIX 3 GRADE 9 PROGRAM COMPARISON (CANADA)

APPENDIX 3 Grade 9 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
Grade 9 Subjects taught	Except for red addition, identical to **NL Grade 7 & 8 Program of Studies:** English Language Arts Mathematics Social Studies Science French Religious Education Technology Education/Industrial Arts/Home Economics Physical Education Music and Art Health Career Exploration Also included is Enterprise Education which is meant to be a cross-curriculum endeavour . Above information is from a "Program of Studies" dated 2007-2008[80]	**PEI:** Except for red addition, identical to **PEI Grade 7 & 8:** Language Arts Mathematics Social Studies Science Second official language Art, Music, Industrial Technology (with optional Manufacturing Technology module for Grade 9), Home Economics, etc. Physical Education Health Education Locally Determined Time (1 - 3%) CIT (Communications & Information Technologies are integrated across the curriculum) Above information is from a "Program of Studies" dated 2007-2008[81] **NS:** Identical to **NS Grade 7 and Grade 8 Program of Studies** with the note that "health" is not mentioned but (as in Grade 7 & 8) "personal development & relationships" is. Compulsory: French (or Mi'kmaw or Gaelic) Language Arts Mathematics Science Social Studies	In **On, Grade 9** is a Secondary Grade. The Arts Business Studies Canadian & World Studies Classical and International Languages English English as a Second Language French as a Second language Guidance & Career Education Health & Physical Education Mathematics Native Languages Native Studies Science Social Sciences Technological Education Above information is from a list of programs with varying dates of implementation from 1999 (The Arts, Science, Social Studies) to 2007 (English).[84]	English Language Arts (1998) International Languages (2000) Mathematics (2006) Social studies (2002) Documents have varying dates from 1998 to 2006 (see above)[85] *Note no coverage of Science and French in the **WNCP** documentation. For these subjects AB and **BC** curriculum guides will be used. In addition to the "traditional" subjects (as listed for the other provinces above) , Alberta also offers so-called optional or complementary courses: Career and Technology Studies; Environmental and Outdoor Education; Ethics (offered once in grades 7, 8, or 9); Fine and Performing Arts: Art, Drama, and/or Music (Choral, General, Instrumental); Aboriginal Languages (Blackfoot Language and Culture); French Alternative Language Programs; French as a Second Language; International Languages (Chinese, German, Italian, , Spanish,); Locally developed /Acquired and Locally Authorized Optional Courses. *Religious Studies: Religious studies may be offered at the discretion of the local school board, under Section 50 of the School Act.*[86] In September 2006, with the introduction of a second language requirement for all Alberta students, schools will have to begin offering a second language in grade 4. The language requirement will be phased in one year at a time until students reach grade 9 in 2011–12. In grade 10, students may choose to continue their studies in the second language that they selected in order to develop a higher level of

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		Personal development and Relationships Physical Education Plus one elective: Art Family Studies Technical Education Music In addition, exploratory courses (or mini-courses) may be incorporated into existing courses to enrich the curriculum. Above information is from a "Program of Studies" dated (2003-2004)[82] **NB:** In **NB**, **Grade 9** is considered to be a High School Grade. Coop Education English Language Arts French Second language (Immersion) Guidance Health and Physical Education Mathematics Science Social Studies Technology/Vocational Education The Arts (visual art, music, dance, drama) School-Career Transitions		language competency in the nine-year course sequence. In addition to the above, AB **Grade 9** also has a group of offerings called "Supports for learning". These include, distance learning, ESL, special needs, and knowledge & employability courses.

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		Above information is from a list of programs with varying dates of implementation from 1998 (Language Arts) to 2006 (Coop Education and Social Studies).[83]		
Grade 9 Comment on Whole Program	Except for Career Exploration, the above list is identical to that of Grades 7 an 8. In NL industrial arts is being phased out in favour of technology education. The above cell suggests that students do one of tech ed and home economics. Also, for the provinces covered, NL appears to be the only one with RE. See several foundation documents at http://www.ed.gov.nl.ca/edu/sp/intermediate.htm	In **PEI** (as in other mainland provinces investigated) there is no mention of religious education.) As a probable consequence, more time is available for LA, Math, SS and Science. Art & music are grouped with industrial technology and home economics. Note also what appears to be 1--3% discretionary time. **In NS:** The above cell suggest that French does not take precedence over other non-English languages in **NS**. In addition to course content given in the cell above, the **NS** on-line documentation includes information on the following programs: (i) French as a second language, (ii) community-based education, comprehensive guidance and counseling, (iii) integration of IT with school programs and (iv) student assessment; and information on the following policies: advanced courses, local	In **ON**, "social studies" becomes history and geography in Grade 7 and continues through Grades 8 & 9. For comments on non-content features of the documentation see the discussion on the individual courses in the cells below. Grades 7 and 8 are "elementary grades" while Grade 9 is at the "secondary" level.	The **WNCP** "international languages" document covers languages other than Canada's two official languages. Note comment on AB Religious Education in the above cell. This appears to apply to Catholic schools in AL. For **British Columbia**[88] only items which are **different** are listed below: International languages include Korean, and Mandarin Chinese. The BC K to 12 Education Plan requires the integration of Information Technology K to 7 and 8 to 10 with other curricular areas. Information Technology 11 and 12 is a stand-alone course.[89] No mention of Religious Education in **BC**.

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		courses, independent study, racial equity, code of conduct, & special education. **In NB:** In **NB** Grade 7 and 8 are "middle school" grades. Grade 9 is a HS grade. Documents on student assessment and student services are available on the web site referred to the cell above. Note that Core French is missing from Grade 9. An email from NB states that "some core French is offered in Elementary & High School, but all districts are different."[87]		
Grade 9 Main topics and general learning outcomes in **English Language Arts**	**(1999!) NL Grade 9 LA**[90] identical to **NL Grade 7 & 8 LA** (in ***Speaking and Listening*)**--1. speak and listen, to explore, extend, clarify, and reflect; 2. communicate information and ideas effectively and clearly, and to respond personally and critically; 3. interact with sensitivity and respect; (*in ***Reading & Viewing***)--1. select, read, and view with understanding a range of material; 2. interpret, select, and combine information using a variety of strategies, resources, and technologies; 3. respond	**(2004) PEI Grade 9 LA**[91] identical to **NL Grade 9 LA** **(2000) NS Grade 9 LA**[92] identical to **NL Grade 9 LA** It should be noted that, when known, the on-line date is given (see parentheses above). Sometimes this date is more recent than the printed date on the document. **(2001) NB Grade 9 LA**[93] identical to **NL Grade 9 LA**	**(2007) ON Grade 9 English has same strands and general outcomes as ON Grades 7 and 8 English**[94] : ***Oral Communication***: 1. listening to understand; 2. speaking to communicate; 3. reflecting on oral communication skills and strategies; ***Reading***: 1. reading for meaning; 2. understanding form and style; 3. reading with fluency; 4. reflecting on reading skills and strategies; ***Writing*:** 1. developing and organizing content; 2. using knowledge of	**(1998) WNCP Grade 9 English Language Arts**:[95] Students will listen, speak, read, write, view, and represent to: 1. explore thoughts, ideas, feelings, and experiences; 2. comprehend and respond personally and critically to oral, print, and other media texts; 3. manage ideas and information; 4. enhance the clarity and artistry of communication; 5. celebrate and build community

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	personally and critically to a range of texts, applying their understanding of language, form, and genre; (*in* ***Writing & Other Ways of Representing***)--1. use writing and other forms of representation to explore, clarify, and reflect; 2. create texts collaboratively and independently; 3. use a range of strategies to develop effective writing and other ways of representing & to enhance clarity, precision & effectiveness.		form and style in writing; 3. applying knowledge of language conventions and presenting written work effectively; 4. reflecting on writing skills and strategies ***Media Literacy***: 1. understanding media texts; 2. understanding media forms, conventions, and techniques; 3. creating media texts; 4. reflecting on media literacy skills and strategies	
Grade 9 Comments on **LA**	**NL Grade 9** comment is identical to **Grade 7** & 8 comment: In **NL** continuity between grades is suggested because the Grade 7, 8, and 9 curriculum outcomes are covered in one document. In addition to the content given in the cell above, the document also deals with (i) meeting the needs of all students, (ii) a gender-inclusive curriculum, (iii) valuing social and cultural diversity, (iv) students with special needs (ESL, challenged, gifted), (v) different learning preferences (i.e., different intelligences), (vi) the learning environment and (vii) student assessment. 1999 document used for above information. The date when put	**PEI Grade 9 LA** comment identical to **NL Grade 9 LA** comment in the cell to the left. **NS Grade 9 LA** comment identical to **NL Grade 9 LA** comment in the cell to the left. **NB Grade 9 LA** comment identical to **NL Grade 9 LA** comment in the cell to the left. It should be noted that in **NB**, Grade 9 is a High School grade.	In **ON Grade 9** English the outcomes related to **media** receive more emphases than in the other provinces. (In the Atlantic Provinces "media texts" are mentioned in a single objective). The Ontario document also deals with the following topics: Student assessment; Instructional Approaches; Cross-Curricular and Integrated Learning; Students With Special Needs; English Language Learners; Antidiscrimination Education in the Language Program; Numeracy and Inquiry/Research Skills; The School Library; The Role of Technology; Guidance and Language Education; Cooper-	The **WNCP LA** general outcomes seem to be quite "general". In fact the wording is consistent across all grades from K—12 Information taken from 1998 document

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	on line is not given.		ative learning; Health and Safety in Language Education. Note in Ontario Grade 9, "English" is used instead of "Language Arts".	
Grade 9 Main topics and general learning outcomes in **Mathematics**	**(2003) NL Grade 9 Math**[96] identical to **NL Grades 7 & 8 Mathematics:** (***Number Concepts/ Number and Relationship Operations***)--1. Students will demonstrate number sense and apply number-theory concepts; 2. Students will demonstrate operation sense and apply operation principles and procedures in both numeric and algebraic situations. (***Patterns and Relations***)-- 1. Students will explore, recognize, represent, and apply patterns and relation-ships, both informally and formally; (***Shape & Space /Measurement***)--1. students will demonstrate an understanding of & apply concepts and skills associated with measurement; (***Shape & Space/Geometry***)--1. students will demonstrate spatial sense and apply concepts, properties and relationships; (***Data Management and Probability***)--1. students will solve problems involving	**(2005) PEI Grade 9 Math**[97] identical to **NL Grade 9 Mathematics** (see cell to the left) **(2000) NS Grade 8 Math** not available to download. **(2002) NB Grade 9 Math**[98] identical to **NL Grade 9 Mathematics** (see cell to the left)	**(2005)** The **ON Grade 9 Math**[99] strands are given below: ***Number Sense and Algebra***: 1. demonstrate an understanding of the exponent rules of multiplication and division and apply them to simplify expressions; 2. manipulate numerical and polynomial expressions, and solve first-degree equations**.** ***Linear Relations***: 1. relationships between two variables; 2. the characteristics of a linear relation; 3. various representations of a linear relation. ***Geometry Analytical Geometry***: the relationship between the form of an equation and the shape of its graph with respect to linearity and non-linearity; 2. the properties of the slope and y-intercept of a linear relation; 3. problems involving linear relations. ***Measurement & Geometry***: 1. the optimal values of various measurements; 2. problems involving the measurements of two-dimensional shapes and the surface areas and volumes of three-dimensional figures; 3. dynamic	**(2006) The strands & general outcomes of WNCP Grade 9 math**[100] are identical to **WNCP Grade** 7 & 8 math: ***Number***--1. develop number sense; ***Patterns and Relations (Patterns)***--1. use patterns to describe the world and solve problems; ***Patterns and Relations (Variables and Equations***)-- 1. represent algebraic expressions in multiple ways; ***Shape and Space (Measurement***)--1. use direct or indirect measurement to solve problems; ***Shape and Space (3-D objects and 2-D shapes***)--1. describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them; ***Shape and Space (Transformations)***--1. describe and analyze position and motion of objects and shapes; ***Statistics and Probability (Data Analysis***)--1. collect, display and analyze data to solve problems; (***Chance and Uncertainty***)--1. use experimental or theoretical probabilities to represent and solve problems involving uncertainty

APPENDIX 3 Grade 9 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
	collection, display and analysis of data; 2. students will represent & solve problems involving uncertainty.		geometry software, geometric properties and relationships and problems involving two-dimensional shapes.	
Grade 8 Comments on **Mathematics**	Wording of the strands and general outcomes is identical to those of Grades 7 & 8. Features of the NL document-tation (other than the content outcomes of the above cell): the **guide** 1. invokes the philosophy and goals of *The Foundation for the Atlantic Canada Mathematics Curriculum*; 2. is based upon several key assumptions or beliefs about mathematics learning; 3. expresses the unifying ideas of The NCTM *Curriculum and Evaluation Standards*; 4. stress-ses the need to deal success-fully with a wide variety of equity and diversity issues; 5. pro-motes the integrate mathema-tics and other subjects; 6. gives suggestions for designing an instructional plan; 7. has section on student assessment; 8. career issues.	**PEI Grade 9 math** non-content issues covered in the **PEI documentation** are less in number than those covered in the NL Grade 9 curriculum guide: 1. invokes the philosophy and goals of *The Foundation for the Atlantic Canada Mathematics Curriculum*; 2. is based upon several key assumptions or beliefs about mathematics learning; 3. expresses the unifying ideas of The NCTM *Curriculum and Evaluation Standards*; 4. stress-ses the need to deal success-fully with a wide variety of equity and diversity issues; 5. pro-motes the integrate mathema-tics and other subjects; 6. has section on student assessment. The **NS Grade 9 math** title, however, is identical to that of all previous Atlantic mathematics documents, leading one to suspect that NS Grade 9 math is identical to Grade 8 math in the other Atlantic Provinces. Further comment on the **NB**	The most obvious difference between **ON Grade 9 Math** and all other Grade 9 programs in cells to the left is that there is no "Probability & Uncertainty" strand in the ON Grade 9 curriculum. Also in Ontario there is a second level Grade 9 course called "applied mathematics", and a "cross-over" math course for those wishing to do the regular math course after the applied course. Other topics in the **ON math** guide are as follows: The Mathematical Processes; Student Assessment; Teaching Approaches; Cross-curricular/Integrated Learning; Planning for Exceptional Students; ESL Students; Antidiscrimination Education in mathematics.	In the WNCP documentation the general objectives are not discriminating because the wording is the same across all grades from K-12, the one exception being that "chance and uncertainty" does not appear until Grade 5. In Summary it can be said that there is a sameness across the provinces as far as strands are concerned, these being: Numbers (number sense/numeration), Patterning (leading to algebraic expressions and equations), Spatial Sense (shapes, measurement, geometry), Data Management (statistics, probability, chance, uncertainty). Even where some incongruency might be suspected (e.g., "transformations" is specifically mentioned in ON and WNCP, but not in the Atlantic Provinces' general outcomes) a quick search of the specific outcomes shows that this topic is covered in all provinces.

APPENDIX 3 Grade 9 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		Grade 9 math guide would be a duplication of the comment in the NL cell to the far left.		
Grade 9 Main topics and/or general learning outcomes in **Social Studies**	**NL Grade 9 Social Studies**[101] focuses on Atlantic Canada in the Global Community and is identical to the Grade 9 PE and NS Social Studies course (1 & 2 cells to the right. NB has elected to reverse the delivery of the Grade 8 and 9 CAMET courses by putting Grade 8 in Grade 9 and vice versa)	**PEI Grade 9 Social Studies** outcomes are available on line in French only. The following is a description from the "Program of Studies": [102] *(***2007***--Currently under development)* The **PEI grade 9 social studies** program explores the interconnectedness between the Atlantic region and the broader world. The course is organized by five thematic areas: ***Physical Setting***, ***Culture***, ***Economics***, ***Technology***, and I***nterdependence***. Students will examine their place in the world from a physical standpoint as well as the role of climate in the region. They will investigate the elements and expressions of Atlantic Canadian culture, the ever-changing world of economic relationships and industry within the region, the explosion of new technologies and what this means for Atlantic Canadians, and the ways in which our local, national, and global relationships continue to evolve and play important roles in our Society today. Teachers	**(2005) On Grade 9 Social Studies: "Canadian and World Studies"**[105]-- offers courses in history and geography in Grades 9 and 10. The **Geography of Canada** course is compulsory in Grade 9, and **Canadian History Since World War I** is compulsory in Grade 10. These courses are offered in two types: academic and ap-plied. **Geography has 5 strands:** ***Geographic Foundations (Space and Systems)***—the components and patterns of Canada's spatial organization; the regional diversity of Canada's natural and human systems; factors that affect Canada's natural and human systems. ***Human-Environment Interactions***— the relationship of Canada's renewable and non-renewable resources to the Canadian economy ; the ways in which natural systems inter-act with human systems and predictions about the outcomes of these interactions; various ways of ensuring resource sustainability in Canada. ***Global Connections***— how Canada's diverse geogra-	**(2002) WNCP Grade 9 Social Studies Canada: Opportunities and Challenges**[106] Summary— Grade 9 students will explore Canada's contemporary opportunities and challenges. They will examine Canadian demographics and political organization. They will consider diverse perspectives related to Canadian political issues, Aboriginal self-government, francophone presence and influence, multiculturalism, media and popular culture, and the impact of the United States on Canadian culture. They will explore cultural interaction in Canadian society and will engage in the debate surround-ing culture and identity in Canada. Through this inquiry, students will develop understanding of the complexities of citizenship and identity in the Canadian context and will enhance their ability to become informed, active, and responsible citizens.

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		are encouraged to explore and incorporate historical links within the pro-gram to enrich the study of the Atlantic region for students. **NS Grade 9 Social Studies** focuses on **Atlantic Canada** & is based on five themes:[103] ***1. Physical Setting***—the location of Atlantic Canada; area; size & physical features; weather & climatic patterns; human activity and natural resources; population & settlement patterns. 2. ***Culture***—concept of culture; contemporary culture in Atlantic Canada; local and global factor affecting local culture; cultural, ethnic and linguistic groups in Atlantic Canada; issues & event surrounding cross-cultural understandings; link between culture and occupations/life-styles; forces causing cultures to change; shaping political culture; 3. ***Economics***—basic economic principles; econ principles in At. Can.; economics & entrepreneurship; primary, secondary, tertiary & quaternary sectors of economics; challenging issues in At. Can.; trade & other economic linkages; 4. ***Techno-logy***—concept and applications of tech; historical application of tech; affect on	phy affects its economic, cul-tural, and environmental links to other countries; connec-tions between Canada and other countries; global issues that affect Canadians. ***Understanding and Managing Change***—how natural and human systems change over time and from place to place; how current or anticipated changes in the geography of Canada will affect the country's future economic, social, and environmental well-being; how global economic and environ-mental factors affect individual choices. ***Methods of Geographic Inquiry and Communication***—Overall Expectations By the end of this course, students will: locate, gather, evaluate, and organize information about Canada's natural and human systems; analyse and interpret data gathered in inquiries into the geography of Canada, using a variety of methods and geotech-nologies; communicate the results of geographic inquiries, using appropriate terms and concepts and a variety of forms and techniques.	

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		employment & standard of living, transportation & communication, manufacturing & resource industries, on recreation, home & community life. 5. ***Interdependance***—a concept of a world view; global interconnectedness; being contributing members to a global community; the importance of global cooperation. **NB Grade 9 Social Studies[104]** **Canadian Identity** ***Exploring Canadian Identity***— the general concept of Canadian identity; ***Geographic Influences***—the influence of physical environment and human activity on Canadian identity; ***Decades of Change***—issues and events from the 1920s to today that have shaped and continue to shape Canadian identity; ***Citizenship***—issues of governance and citizenship that relate to the rights and responsibilities of Canadians and the evolution of Canadian identity; ***Challenges and Opportunities***—Challenges and related opportunities that will continue to shape Canadian identity; ***Reflections on Canadian***		

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		Identity— Reflective expressions of Canadian identity.		
Grade 9 Comments on **Social Studies**	Notwithstanding the departure in Grade Social Studies and NB SS description in this document, the view from NL is that in the Atlantic Region the K - 9 social studies curriculum is developed in common via CAMET. In addition to the content described in the cell above, the curriculum guide also covers (i) effective teaching, (ii) instructional approaches, (iii) assessment & evaluation.	Revisions under consideration for the **PEI Grade 9 SS** course will strengthen the overarching theme of global Interdependence and will better align the course outcomes with those of the new grade 7 and 8 programs. Teachers are requested to continue with the existing curriculum guide (2007) and resources until new materials are completed. Note that the five PEI themes are expanded in the NS material. **In NS:** In addition to the content described in the cell above, the curriculum guide also covers (i) effective teaching, (ii) instructional approaches, (iii) assessment & evaluation. In addition to the above material, there is a supplementary curriculum document entitled "Community Economic Development"[107] with 27 new outcomes to be integrated throughout the Grade 9 year. **In NB:** NB has elected to reverse the delivery of the Grade 8 and 9 CAMET courses by putting	Note that Ontario does not use the phrase "Social Studies". In addition to the curriculum outcomes the guide also discusses the following: assessment & evaluation, teaching approaches, the importance of studying current events, catering to exceptional students, ESL students, antidiscrimination education, literacy, numeracy inquiry/research skills, the role of technology in Canadian & World Studies, health & safety in Canadian & World Studies. Grade 9 & grade 10 (including "applied" courses) are covered in the same document.	Note that only "content" is dealt with in this file. The **WNCP** documentation goes into great detail with respect to outcomes relating to citizenship/identity, values and attitudes, and skills and processes.

APPENDIX 3 Grade 9 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		Grade 8 in Grade 9 and vice versa. The curriculum guide is comprehensive and includes these "non-content" topics: the characteristics and needs of adolescent learners, equity & diversity, assessment & evaluation, process/skills, local history, rubrics.		
Grade 9 Main topics and/or general learning outcomes in **Science**	**(1999) NL Grade 9 Science**[108] ***Reproduction*—**cellular processes; genetic changes (fewer sub-headings than PE, but same coverage in each unit) ***Atoms & elements***—theory of matter; atomic theory; periodic table, periodic law; chemical & physical changes; STSE ***Characteristic of Electricity***—static electricity; current electricity & circuits; parallel & series connections; uses of electricity. ***Space Exploration***—the solar system; the universe; STSE (space exploration)	**(2004) PEI Grade 9 Science**[109]**—**: ***Atoms & Elements***—physical properties; common chemical reactions; atom & molecule models; common elements; chemical symbol & molecular formulas. ***Characteristic of Electricity***—static electrical charge; production of static electrical charges; flow of charge; com-pare static electricity and electric Current; series and parallel Circuits; domestic power con-sumption costs; efficiency of an electrical appliance; the transfer and conversion of energy. ***Space Exploration***—the apparent motion of celestial bodies; the formation of the solar system; the components of the solar system; effects of solar phenomena on Earth; the origin and evolution of the universe; the major components	**(1999) ON Grade 9 Science**[111] **has 4 strands:** ***Biology (reproduction)***—cell theory, cell division, mitosis, sexual & asexual reproductive systems; cell division & cell reproduction; societal implications of scientific research and technological developments. ***Chemistry (atoms & elements)*—**models of the atom, the atomic structure of common elements, & the periodic table; the physical and chemical properties of elements and compounds; predict the properties of elements; • the refinement, use, and recycling of chemical elements 7 compounds. ***Earth and Space Science (The Study of the Universe)***—the formation, evolution, structure, and nature of our solar system and the universe; the	(2003) AB Grade 9 Science112: Biological Diversity Matter and Chemical Change Environmental Chemistry Space Exploration . (2006) BC Grade 9 Science113: Life Science: Reproduction Physical Science: Atoms, Elements, and Compounds Physical Science: Characteristics of Electricity Earth and Space Science: Space Exploration

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		of the universe. ***Reproduction***—the nucleus of a cell & cellular processes; cell division; sexual and asexual reproduction; changes in a cell's genetic information. **(2001) NS Grade 9 Science is not available on line.** **(2002) NB Grade 9 Science is identical to PEI Grade 9 Science**[110]	appearance and motion of visible celestial objects; how human endeavours and interest in space have contributed to our understanding of outer space, the Earth, and living things; Canadian contributions to space exploration. ***Physics (The Characteristics of Electricity)***—models of static and current electricity; •electrical circuits found in everyday life; relationships among current, potential difference, and resistance; the social, economic, and environmental costs and benefits arising from the methods of electrical energy production used in Canada.	
Grade 9 Comments on **Science**	The new Intermediate science curricula is based on the Pan Canadian Framework and the CAMET (former APEF) framework, regionalized for NL. See comment in cell to the right.	Much more than content is covered in the **PEI Grade 9 Science** documentation. For example: catering to different needs, student assessment, attitude outcomes, and recommended videos. Much more than content is covered in the **NB Grade 9 Science** documentation. For example: catering to different needs, student assessment, & attitude outcomes.	Strands identical to NL. The **ON Grade 9 Science** curriculum document also presents a grade 9 "applied" science course, plus parallel Grade 10 courses. Other matters covered in the document are: teaching approaches, exceptional students, the role of technology, ESL, career education, cooperative education, health & safety. It should be noted that **the ON Grade 9 Science** data is from a 1999 document.	

APPENDIX 3 Grade 9 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
Grade 9 main topics and/or general learning outcomes in core **French**	**(2007) NL Grade 9 French**[114] general headings are identical to those of Grade 7 and 8.	**(2003)** All **PEI Grade 9 Core French** documentation is written in French[115] **(1999)** All **NS Grade 9 Core French** documentation is written in French and not available on-line. **(2001) NB Grade 9 French**[116] documentation is available for French Immersion only. The main headings are ***-Appreciation of the French Language and of Cultural Diversity;*** ***-Listening and Oral expression;*** ***-Reading and Viewing;*** ***-Writing and Representing.*** Moreover, the above information is taken from an umbrella document which covers all of HS (indeed, possibly all grades with French Immersion).	**(1999) ON Grade 9 Core French**[117] has 3 strands: ***Oral communication*—**1. short, structured spoken texts; 2.short, simple, non-structured media works; 3. short conversations and teacher-guided discussions; 4. oral presentations; 5. appro-priate language conventions. ***Reading*—**1. a variety of simple texts; 2. gather information; 3. language conventions. ***Writing*—**1. short written texts; 2. written texts in structured and open-ended situations; 3. appro-priate language.	There are no on-line documents for **WNCP Grade 9 Core French**. Consequently AB and **BC** French programs are surveyed here**.** **Grade 9 AB Core French**[118]**:** On-line documents available in French only. **(2001) Grade 9 B C core French**:[119] ***Communicating*—**1. information, opinions, and preferences; 2. activities, people, places, and things; 3. past, present, and future; 3. real-life situations. ***Acquiring Information*—**1. information from French-language resources; 2. oral, visual, and written forms. ***Experience Creative Works*—**1. authentic creative works from the Francophone world. ***Understanding Cultural Influences*—**1. Francophone cultures from around the world; 2. similarities and differences between their own customs and those of Francophone cultures; 3. language, expressions, and behaviours that suit cultural context.
Grade 9 Comments on **French**	Based on the APEF Document (see cell to the right)	See a proposed common framework **(2002)** for Atlantic Provinces core French at http://www.ed.gov.nl.ca/edu/sp/foundations/core_french/orientation.pdf This is an "orientation" document which summarizes the French	Although not obvious from the cell above, there is some detail on catering to special needs students, the role of technology, career education, There is also a less challenging "applied" French course at the	**WCNP** has a document entitled International languages which covers languages other than Canada's two official languages. Alberta documents are in French only. **British Columbia** documentation seems quite brief, the complete on-line information being

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*
		program in each Atlantic Province in the late 1990's and proposes common keystage outcomes. The document proposes 4 strands: communication, culture, general language education, and language(linguistic elements).	Grade 9 level. Since this is a 1999 document, it's quite possible that revisions have been made.	given above. "Schools have the responsibility to ensure that all prescribed learning outcomes in each IRP are met; however, schools have flexibility in determining how delivery of the prescribed learning outcomes can best take place." http://www.bced.gov.bc.ca/irp/lo.htm

APPENDIX 3 Grade 9 Program Comparison (Canada)

Parameters	Newfoundland & Labrador	Other Atlantic Provinces	Ontario	WNCP (or AB and BC)*

APPENDIX 4 NATIONAL EMAILS

APPENDIX 4 **NATIONAL EMAILS**

NL French Email 1:

From: Bartlett, Gennita
Sent: Fri 1/18/2008 4:12 PM
To: Lloyd Gill [mailto:l.gill@nl.rogers.com]
Subject: Intermediate Core French Comparison

The Altantic Document is the Framework. Our document is somewhat different but based on the principles and philosophy of second language learning in the Framework. It is currently used but is draft. We are revising many aspects as we speak. However, the outcomes are finished. I can email this to you.

Cheers

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NL Science Email 1:

Hi Lloyd,

We are in the process of renewing our Intermediate Science curriculum. Our original plan had been to implement the new program, starting with grade 7, in Sept 2007. Unfortunately, that was delayed and we opted to implement part way through the school year. That is, we began the school year using the two units from the old 1998 curriculum and starting the new curriculum in January 2008.

Currently the Grade 7 guide is being formatted for publishing and will be placed on the web by the end of January. I can provide you with pdf versions of the guide if that would be helpful.

The new Grade 8 curriculum is on track to be implemented in Sept 2008, followed by Grade 9 in 2009. The new Intermediate science curricula is based on the Pan Canadian Framework and the CAMET (former APEF)

framework, regionalized for NL. The Grade 8 and 9 curricula currently on our website http://www.ed.gov.nl.ca/edu/sp/inter_sci.htm will be replaced in Sept 2008 and 2009, respectively. I can provide you with the draft versions of both Grade 8 and 9 if that would be helpful to you.

All the best,

Craig White
Program Development Specialist – Science

NL Social Studies Email 1:

Hi Lloyd

In the Atlantic Region the K - 9 social studies curriculum is developed in common via CAMET.

At the present time, although there may be some difference in sequencing, we are all subscribing to the same courses at Grade 7 and Grade 9. However, in NL we departed from the CAMET model and developed a different course for Grade 8 - Newfoundland and Labrador History.

As you review the grade 7 and 9 documents, while there maybe be some differences in documents formatting, or in the articulation of ideas in columns 2, 3 and 4 of the guides, the specific curriculum outcomes are the same.

I hope this helps. If you require further clarification, please do not hesitate to e-mail or call (729-5187).

Best regards,
Darryl

NL Social Studies Email 2 (re: NB Social Studies):

NB has chosen to swap the grade 8 and 9 programs. So they do "Grade 9" with their Grade 8 students, and complete the Grade 8 program with their Grade 9s. I hope this helps.

NB Music Email 1:

Hi Loyd,

We do have a curriculum document for middle level music but it has not been uploaded to our curriculum site.

Janet

Janet Bishop
Administrative Assistant
Educational Programs and Services
Department of Education
P.O. Box 6000, Fredericton, NB E3B 5H1
Phone: (506) 453-2155
Fax: (506) 457-7835

APPENDIX 4 **NATIONAL EMAILS**

From: Lloyd Gill [mailto:l.gill@nl.rogers.com]
Sent: January 24, 2008 5:00 PM
To: Bishop, Janet (ED)
Subject: taking you up on your offer

Janet,
As far as I can from the on-line documentation for NB http://www.gnb.ca/0000/anglophone-e.asp#cd
music is done in Elementary and in High School, but not in the Middle School grades. Is this indeed the case?
Lloyd

NB Email 2:

Hi Lloyd,

There is some core French in Elem and High school but every school
district is different.

Janet
Janet Bishop, Administrative Assistant, Educational Programs and Services.

APPENDIX 5 INSTRUCTIONAL TIME IN INTERMEDIATE SCHOOLS (CANADA)

APPENDIX 5 **Instructional Time in Intermediate Schools (Canada)**
(SEE DATA ON MANITOBA & SASKATCHEWAN AT END OF APPENDIX 5)

parameter	Prince Edward Island	Nova Scotia	New Brunswick	Ontario	WNCP (or AB &/or BC)*
Allotted time as a percent or in hours	Language Arts (18 - 22%) Mathematics (18 - 22%) Social Studies (13 - 15%) Science (13 - 15%) Second official language (11 - 13%) Art, Music, Industrial Technology [with optional manufacturing technology module for grade 9], Home Economics, etc. (7 - 13%) Physical Education (4 - 6%) Health Education (4 - 6%) [about 90 minutes per 6-day cycle][120] Locally Determined Time (1 - 3%) Above information is from a "Program of Studies" dated 2007-2008[121]	Limited information available on-line for **NS**. "It is the schools responsibility to design schedules appropriate for all students". [122] Minimum requirement in Grades 7 and 8 mathematics and English Language Arts is 60 minutes per day.[123] Core French—30 minutes per day.[124] French Immersion Language Arts—60 minutes per day.[125]	In NB a common curriculum is grouped for Years 9 and 10. Therefore the times given below are for 2 years of schooling:[126] English language arts-360 hours; Mathematics – 360 hours; French – 180 hours; Social Studies – 180 hours; Science – 180 hours; Visual Arts, Music, Physical Education and Health, Broad Based Technology – 360 hours total. The areas of Personal Development and Career Planning and Human Ecology (Family Studies) could require approximately forty hours each over the two year period. Students can meet the minimum time requirements for Visual Arts, Music, Physical Education and Health and Broad Based Technology (360 hours) through 90 hours in each of the areas. The other way in which the	Couldn't find much **ON** time allotment information on line. A Grade 9 one-credit course is a 110-hour course.[127]	**Alberta:**[128] Junior high school students must have access to a minimum of 950 hours of instruction per year per grade. English Language Arts (150 hr/yr or more) French Language Arts* and English Language Arts OR Français** and English Language Arts (250 h/yr or more) Mathematics (100 hr/yr or more) Science (100 hr/yr or more) Social Studies (100 hr/yr or more) Physical Education (75 hr/yr or more) Health & Life Skills (50 hr/yr or more)*** Optional courses (150 hr/yr or more) **AB** "optional" courses as listed in the Grade 7 file. *French language arts is taught in French immersion programs. ** Français is taught in francophone programs. ***Health and Personal Life Skills is a required course, but it is not necessary to offer this course each year. Therefore, it is recommended that Health and Personal Life Skills be offered for 150 hours or more over the three years, Grade 7 through Grade 9. **Information and Communication[129] Technology (IC**T) is a core program iinfused within core curricula in English language arts, mathematics, science and social studies at all grade levels. **British Columbia:**[130] In grades 4 to 9, minimum time allotments expressed as percentages of total instructional time are recommended for each required area of

APPENDIX 5 **Instructional Time in Intermediate Schools (Canada)**
(SEE DATA ON MANITOBA & SASKATCHEWAN AT END OF APPENDIX 5)

parameter	Prince Edward Island	Nova Scotia	New Brunswick	Ontario	WNCP (or AB &/or BC)*
			requirements can be met is through 90 hours in two of the areas, 45 hours in one of the others, and 135 hours in the fourth. This second option, if viable in terms of staffing and scheduling, provides some student choice. Within either 360 hour configuration, students must have a minimum of 45 hours in all four areas; this should preferably be at grade nine.		study (but could not find these percentages on-line). It is up to each school to design a timetable appropriate for all students.
Comment	In **PEI** (as in most other mainland provinces investigated) there is no mention of religious education. As a probable consequence, more time is available for LA, Math, SS and Science. Art & music are grouped with industrial technology and home economics. Note also what appears to be 1--3% discretionary time.				Comments have been more conveniently made in the cell above.

APPENDIX 5 **Instructional Time in Intermediate Schools (Canada)**
(MANITOBA & SASKATCHEWAN)

MANITOBA[131]

MAN. Early and Middle Years Recommended Subject Area Time Allotments			
Subject Areas		**Grades 1 to 6**	**Grades 7 and 8**
Compulsory	language arts (English)	35%	27%
	mathematics	15%	17%
	science	10%	13%
	social studies	10%	13%
	physical education/health education	11%	9%
	arts education	10%	8%
Optional	e.g., basic French*, other languages, Aboriginal studies, etc.	9%	13%
Total		**100%**	**100%**

* A recommendation for schools offering basic French or other second languages is to re-allocate a small portion of English Language Arts time for this purpose. This recognizes that some language concepts are transferable and should assist schools to accommodate the basic French grant requirement.

APPENDIX 5 **Instructional Time in Intermediate Schools (Canada)**
(MANITOBA & SASKATCHEWAN)

SASKATCHEWAN[132]

The compulsory subjects in the Saskatchewan Grades 7—9 core curriculum are known as 'required areas of study'. They are:

- language arts 300 minutes per week
- mathematics 200 minutes per week
- arts education 200 minutes per week
- health education 100 minutes per week
- physical education 150 minutes per week
- science 150 minutes per week
- social studies 150 minutes per week

While there is no overt mention of French in the above list of compulsory subjects it should be pointed out that Saskatchewan has French Immersion and Fransaskois Programs. Also core French is listed on the web site given in the endnotes.

Students are required to study 50 hours of computer literacy before they complete Grade/Year 9. Other points:

- At the Elementary and Middle Levels, school divisions may gain time for locally-determined options by reducing the time to be spent in one or more of the required areas up to a maximum of 20%.
- Middle Level Career Guidance is a 120 hour course provided to students over a four year period (grades 6-9) in fulfilment of the 50 minutes per week/per grade level requirement of Core Curriculum for guidance instruction.
- Effective September 2004, students entering grade seven are required to take at least three Practical and Applied Arts (PAA) survey courses before completing grade nine. Each course must be a minimum of 50 hours [75 minutes per week]. Students in grades 7-9 may use Christian Ethics courses to fulfill two of the three PAA survey courses requirement.

APPENDIX 6 INTERMEDIATE PROGRAM REVIEW (NON-CANADIAN)

APPENDIX 6 Intermediate Program Review (NON-CANADIAN)

Parameters	United Kingdom	South Australia	New Zealand	Finland
Subjects listed under Newfound-land & Labrador are for Grade 9. In the other jurisdictions (where it is sometimes difficult to identify grade level cut-off) the subjects are those taken by students up to 14 or 15 years of age	**UK Key Stage 3 (11—14 yrs)**: English Mathematics Geography History Science Modern Foreign Language Art & Design Careers Education Citizenship Design & Technology ICT Music Physical Education Personal, Social& Health Education [non-statutory] Religious Education Sex Education 2002 or later[133]	**SAu Middle Years Band (Years 6, 7, 8 and 9):** English Mathematics Society and Environment Science Languages Arts Design and Technology Health and Physical Education Religious Education* Arts includes the major arts forms of dance, drama, media, music and visual arts, combinations of these art forms and those that are newly emergent. Two subject areas that are integrated across the curriculum are Equity Cross Curriculum Per-spectives and Enterprise & Vo-cational Education. Also, *every* curriculum document emphasizes literacy, numeracy, and ICT. *for some non-government schools. The above information is from a document dated 2005[134]	**In NZ "intermediate grades" are designated as Year 7—8.** However, Level 4 curriculum objectives most closely match years 7, 8 and 9.[135] English Mathematics & Statistics, Social Sciences Science Learning Languages The Arts (music, dance, drama, visual arts Health & Physical Education Technology In addition to English there are two other National languages: Te reo Maori and New Zealand Sign Language (NZSL) Brand new documentation launched November 6, 2007[136]	The National Core Curriculum[137] of Basic Education **Finland** syllabus shall contain, as enacted by virtue of Section 14 of the Education Act 1998[138] (amended to 2004), the following core subjects: Mother tongue and literature (i.e., Finnish or Swedish) Second national language (i.e., Swedish or Finnish) Mathematics History Geography Physics Chemistry Biology Foreign languages Environmental studies Health education Religious education or ethics, Social studies Physical education Home economics Music, Art, Crafts.

APPENDIX 6 Intermediate Program Review (NON-CANADIAN)

Parameters	United Kingdom	South Australia	New Zealand	Finland
Grade 9 Comment on Whole Program	**Stages of Education in the UK**: Key Stage 1: 5 to 7 years old Key Stage 2: 7 to 11 years old Key Stage 3: 11 to 14 years old Key Stage 4: 14 to 16 years old In the UK there appears to a greater number of subjects than in NL, although one cannot be sure that the "required" number per year is any different. It must be noted that the above list extends over 3 or 4 years of schooling (not just one grade). It is stated that all schools must provide religious education, but parents may choose to exempt their child. One obvious reason for an expanded list is that history and geography are discrete courses. Also, while a *European Union* Modern Foreign Language is compulsory, students may elect to do an additional MFL. Note in the UK there is a separate [statutory] course on sex education. It may, however, be included in the broader Personal, Social & Health Edu-cation. Also, there is some indication that ICT is taught by incorporating the skills throughout the curriculum[139].	**SAu** Curriculum framework: -Early Years Band (birth to Year 2) - Primary Years Band (Years 3, 4 and 5) - Middle Years Band (Years 6, 7, 8 and 9) - Senior Years Band (Years 10, 11 and 12). Expectations (outcomes) are represented by standards: Towards the end of year 2 Standard 1 Towards the end of year 4 Standard 2 Towards the end of year 6 Standard 3 Towards the end of year 8 Standard 4 Towards the end of year 10 Standard 5 Towards end of year 12 Year 12 Standard	In addition to a clear policy on Early Childhood Education (ECE)[140] for children up to 5 years, NZ schools are structured in a variety of ways as follows: Contributing (Primary) Schools (Years 1—6), Intermediate Schools (Year 7—8), Secondary Schools (Year 9—13), Full Primary Schools (Year 1—8), , , Composite Secondary Schools (Year 7—13), Restricted Composite Schools (Year 7—10), Senior High Schools (Year 11—13), Composite Schools (Year 1—13) and the Correspondence School (ECE to Year 13).[141] NZ Curriculum is delivered in "Levels", from Level 1 to Level 8 where Level 4 most closely matches Years 7, 8 and 9.[142] The law requires New Zealand state primary schools to offer secular (non-religious) education. School boards may choose, however, to allow volunteers to provide a limited amount of religious instruction at school. Also, while it appears that "career education" is not a separate subject, this service is still provided as part of the guidance program. In like manner "sex education" is a feature of the Health & Physical Education Course [143]	Not counting college and university level education, schooling in Finland is divided into three major levels:[144] *Pre-Primary Education* (6 year-olds) *Basic Education* (9 years of schooling in comprehensive schools, 7-16 year-olds) *(Upper) Secondary Education* Basic Education has two divisions: Primary Level (Years 1 to 6, or 7—13 year-olds) and Lower Secondary Level (Years 7—9, or 14 to 16 year-olds).[145] In addition to the 9 years of Basic Education, some students may require (or elect) to do more Basic Education courses in their 10th year of schooling before moving on to Upper Secondary Education (17—19 year olds) or to Vocational Institutions & Apprenticeship Training. See separate WORD file "Education in Finland" The national core curriculum includes the objectives and core contents of different subjects. The education

Parameters	United Kingdom	South Australia	New Zealand	Finland
				providers, usually the local education authorities and the schools themselves draw up their own curricula within the framework of the national core curriculum. (see email 1 in Appendix 2)
Grade 9 Main topics and general learning outcomes in **English Language Arts**	**UK Key Stage 3 English**[146] has the following headings: ***Speaking & Listening*** (including group discussion and interaction, drama, standard English, language variation); ***Reading*** (reading for meaning, understanding the writer's craft, works of literary heritage, different cultures & traditions, printed & ICT-based texts, media & moving images text, language structure & variation); ***Writing*** (to imagine, explore, entertain; to inform, explain, describe; to persuade, argue, advise; to analyse, review, comment; using proper planning, punctuation, spelling, standard English, handwriting, language structure & presentation,)	**SAu Middle School English**[147] is based on 3 themes: i) listening & speaking ii) reading/viewing iii) writing The above headings are developed through **3 strands**: i) ***texts & contexts*** (*listening to & speaking* about various texts and electronic media; *reading/viewing* texts/media with critical understanding; *writing* texts purposefully, including using software programs). ii) ***language*** (*listening & using language* purposefully in different social contexts to produce organized spoken communication; *in reading/ viewing* text use language to organize and make meaning of written & visual texts; *in writing* texts use language purposefully, in different social contexts, to produce & to convey meaning in written and visual texts). iii***) strategies*** (*listening to & producing* spoken texts by using strategies such as planning, preparing, rehearsing and presenting (using digital resources), and then evaluating; *in reading and*	**NZ Level 4 English**[148] is structured around two interconnected strands, each encompassing the oral, written, and visual forms of the language: 1. ***making meaning of ideas or information they receive*** (Listening, Reading, and View-ing) 2. ***creating meaning for themselves or others*** (Speaking, Writing, and Present-ing).	**Mother Tongue (Finnish) and Literature core content for Grade 6—9**:[149] ***interaction skills*** (communication in different environments; ***text comprehension*** (listening for comprehension; skimming/ searching skills; examination/ interpretation of texts; types of prose; summarizing text, identifying viewpoint). ***preparing composition & spoken presentations*** (out-lining & presenting to different target groups; production of fiction; courteous ways of communicating; spelling/clauses/sentences; using ICT) ***Information management skills*** (acquisition of knowledge from different sources; taking notes and organizing materials)

Parameters	United Kingdom	South Australia	New Zealand	Finland
		viewing texts use strategies for recording & organizing information, for analyzing electronic information, & for identifying sociocultural features of text; *in writing* texts use strategies for planning, drafting, writing, editing, revising, proofreading, spelling presenting, evaluating, the product, plus the use of desktop publishing tools and/or word processing tools.)		***relationship with language, literature & other cultures*** (history & characteristics of Finnish language; Finnish literature; classification of literature; analysis of fictional structures; theatre & films)
Grade 9 Comments on **LA**	When compared with **NL Grade 9 LA**, the **UK English** documentation suggests more emphases on ***drama*** and the sub-topics listed under ***language variation*** (these sub-topics include factors that affect the English language development). Other than that, the NL headings and UK headings are virtually identical. It must be noted that the above list extends over 3 or 4 years of schooling (not just one grade).	Note that the **SAu** headings are identical to those of **NL** and the **UK**. However, there appears to be more direct reference to electronic/digital resources in **SA**, and, to a lesser extent in the **UK** than is the case for **NL**. It should be pointed out that the above data is a bench-mark for the end of **Year 8** in SAu (which is probably Grade 8 in NL).	While the **NZ** headings have not been expanded, it can be readily seen that they match the broad themes in **NL** and **SAu**. Although at this level of outcomes it is difficult to be sure about the use of technology/ media/digital resources, it can be said that there is no such direct reference in the on-line NZ document.	Parallel statements can be made for other "mother tongues" of Finland: Swedish, Sami, Romany, Finnish sign language.
Grade 9 Main topics and general learning outcomes in **Mathematics**	**UK Key Stage 3 mathematics**[150]: ***Number and Algebra*** (integers, powers, roots, fractions, decimals, percentages, ratio & proportion, equations/formulas/ identities, sequences/functions/ graphs). ***Shape, space & measures*** (angles, properties of triangles/ rectangles, properties of circles, 3-D shapes, transformations & coordinates, measures & construction). ***Handling data*** (specifying the	**SAu Middle School math has 5 strands**:[151] ***Exploring. Analysing & Modelling Data***—(designs a survey, collects data and classifies sequence, collapses, tabulates and represents the data. Reads tables, diagrams, line and bar graphs. Makes predictions. Interprets data and makes numerical statements about probability, models situations, using data to validate their theories about	**NZ math has 3 strands:**[152] ***Number & Algebra***—(fractions, decimals, percentages, equivalent fractions, positive & negative integers, equations and expressions, patterns and relationships, ***Geometry & Measurement***—(metric units for mass, weight, time, angle, volume, temperature; metric conversion, perimeters & areas; 2-D & 3-D shapes; compass directions, grid references, location;	**Finland mathematics Grades 6—9:**[153] ***numbers & calculations*** (rational numbers, real numbers; absolute values, reciprocals; time calculations; prime factors; multiplying & dividing with fractions, decimal fractions; ratio & proportion; percentage calculation;

Parameters	United Kingdom	South Australia	New Zealand	Finland
	problem & planning, collecting the data, processing & representing the data, interpreting & discussing the results)	the fairness of everyday situations including hypothetical situations.) ***Measurement***—(Selects appropriate measurement units and scale to conduct collaborative research. Applies a variety of techniques and tools and formulae to solve problems. ***Number***—(integers, rational numbers and commonly encountered irrational numbers; operations with integers and rational numbers; proportional situations involving integers, and rational numbers). ***Pattern & Algebraic Reasoning*** —(uses numeric and visual patterns (graphs) to solve problems; linear equations, inequalities; series expressions, prime factors; interior angles of polygons, software graphical packages). ***Spatial Sense & Geometric Reasoning***—(characteristics & properties of 2-D & 3_D shapes; transformations, rotations, tessellations; similar & congruent triangles).	transformations. ***Statistics***—(investigations involving data collection & sorting; identifying patterns/relationships; displays; probability).	rounding/estimating; square roots; powers/exponents. ***algebra*** (reduction of expressions; reduction of exponential expression; addition/subtracting/multiplying polynomials; calculating values of expressions with variables; inequality, domain, solution set; first degree & incomplete quadratic equations; solving pairs of equations; number sequences. ***functions*** (sets of coordinates, graphing; null points/maximum /minimum/increasing/decreasing; linear function; direct & indirect proportionality. ***geometry*** (angles; polygons; perimeter/ area; circle proper-ties; volume & surface area of 3-D figures; similarity & congruence; construction; reflection/rotation/transformation; Pythagorean theorem; triangle/circle relationship; trig & the right triangle. ***probability & statistics*** (frequency/relative frequency; average, mode, mean; dispersion; diagrams; gathering, adapting & presenting information.

APPENDIX 6 Intermediate Program Review (NON-CANADIAN)

Parameters	United Kingdom	South Australia	New Zealand	Finland
Grade 9 Comments on **Mathematics**	The NL and UK mathematics curricula compare very well under the general headings of algebra, geometry and statistics/probability. Each unit begins with "non-content outcomes" that permeate the unit. These outcomes focus on problem solving, communicating and reasoning. It is possible to identify UK terms (e.g., circle, function, proportion) that are not mentioned in **NL Grade 9**, but it must be remembered that the UK outcomes cover approximately 3 years of schooling. For example in NL "properties of circles" is done in Grade 8. It must be noted that the above list extends over 3 or 4 years of schooling (not just one grade).	The **SAu** math headings closely parallel those of NL (even though not in the same order). It should be pointed out that the above data is a bench-mark for the end of **Year 8** in SAu (which is probably Grade 8 in NL).	In **NZ** (as in the UK) there is an economy of strands in mathematics (only 3). However, the material covered is very likely similar in content and scope.	Finland mathematics is at least as comprehensive as that of NL—maybe more so. However, in Finland there is no separate heading for "measurement" (a discrete topic that appears in the other jurisdictions in this table).
Grade 9 Main topics and/or general learning outcomes in **Social Studies**	**UK Key Stage 3 Geography**[154] focuses closely on geographical enquiry & skills. The content areas are: ***Knowledge & understanding of places*** (local, regional, national, international and global; look at 2 countries with significantly different stages of economic development). ***Knowledge and understanding of patterns & process*** (patterns of physical and human features, physical and human processes). ***Knowledge and understanding of environmental change and sustainable development*** . All of the above is developed around	In **SAu** this subject area is titled **Society & Environment**.[156] In the Middle Years, there are four strands: ***time, continuity and change*** changes in wealth and/or ability to sustain natural resources; critically uses primary and secondary sources; interprets people's motives and actions from perspectives of power; ***place, space and environment*** (places in Australia and elsewhere according to their location, natural and built features, and population and resources; local and global, environmental or socio-economic	**NZ Level 4 Social Studies**[157] has five Strands: ***Social Organization*** (how people organize themselves in response to challenge and crisis; how and why people exercise their rights and meet their responsibilities). ***Culture and Heritage*** (sustaining cultural and heritage; the impact of technology and ideas on culture and heritage;). ***Place and Environment*** (how places reflect past interactions of people with the environment; why and how people find out about places and environments). ***Time, Continuity, and Change***	**Finland Geography grades 7-9**[158] has 4 strands**:** ***Earth-the human being's home planet***—physical-geographical and human-geographical map views; planet's internal & external events; a comparison of two or more planets. ***Europe***—map view, landscapes, natural conditions, human activity; Europe as part of the world, Europe's future. ***Finland in the World***— map view & landscape;

Parameters	United Kingdom	South Australia	New Zealand	Finland
	10 themes (tectonic processes, geomorphological processes, weather and climate, ecosystems, population distribution and change, the changing characteristics of settlements, changing distribution of economic activity, development, environmental issues, resource issues). **UK Key Stage 3 History**[155] is organized under the following headings: ***Chronological understanding; Knowledge and understanding of events, people and changes* in the past;** ***Historical interpretation*;** ***Historical enquiry;*** ***Organization and communication;*** In all of the above, the students should focus on three British studies, a European study and two world studies. Specifically— **Britain 1066-1500; Britain 1500-1750; Britain 1750-1900; A European study before 1914; A world study before 1900; A world study after 1900 (**including the two World Wars, the Holocaust, the Cold War, and their impact on Britain, Europe and the wider world)	issues; ecological sustainability. ***societies and cultures*** (resolution of conflict in Australia's multicultural society; the histories, cultures and present day experiences of rural and urban Aboriginal groups, and reconciliation; ethical behaviour in relation to the human rights. ***social systems*** (political, legal and social systems and people's rights and responsibilities; factors that should be analysed by consumers, producers and governments regarding their decisions about goods and services, including people's work; ethical practices at school, in the community, and within business and government systems). The Curriculum Scope for each strand is organized around three Key Ideas: knowledge in context; skills in context; values and active participation in context.	(causes and effects of events that have shaped the lives of a group of people; how and why people experience events in different ways). ***Resources and Economic Activities*** (how and why people view and use resources differently and the consequences of this; how and why individuals and groups seek to safeguard the rights of consumers).	interaction of human activity & nature; population & minority cultures; the environment. ***The common environment*—**local & global concerns; questions in the Baltic Region; the human being as a consumer. **Finland Grade 7—9 History**:[159] ***Nationalism & life in the 19th century*—**19th century Finland; key political changes at the beginning of the 19th century; culture as a mirror of nationalism in Finland. ***The industrial revolution*—**effects on people's lives; urbanization. ***The period of transition in Finland*—**breakdown of class society; russification of Finland & resistance to russification. ***From great power rivalry to World War I and its consequences*—**imperialism & its impacts; WWI; collapse of Russian empire; 1917 revolution; Finland's independence; civil war. ***The depression & the era of totalitarianism*** ***The World War II period***

Parameters	United Kingdom	South Australia	New Zealand	Finland
				Finland from the 1950's to the present day ***From East-West conflicts to North-South confrontation***—the cold war; division of the world into poor & wealthy states. ***Life at the end of the 19th century & the beginning of the 20th century***—birth of the Western consumer society; evolution of communications. ***Plus an elective unit***—one of evolution of equality; evolution of culture; development of technology; from the break-up of Europe to its reunification; one culture outside Europe.
Grade 9 Comments on **Social Studies**	While the above cell indicates a lot of material (and two courses), it should be remembered that Key Stage 3 encompasses Years 7, 8 and 9. In addition to the "content" of the geography course, there is a strong focus on "geographical enquiry & skills". Similarly in the history course there are these outcome headings that are meant to influence the delivery of the course: chronological understranding, knowledge and	It appears that in social studies in **SAu** Middle Years (especially in the last two strands) there is much effort placed on promoting an understanding between different cultures and socioe-conomic groups. Integrated among the four strands are modules on Crime Prevention Education[160] It should be pointed out that the above data is a bench-mark for the end of **Year 8** in SAu (which is probably Grade 8 in NL).	The general nature of the outcomes in the above cell gives way to the more specific because the **NZ** social studies programs emphasize learning about *New Zealand* peoples, cultures, and groups in various time and place settings. In NZ, achievement objectives are also established for three social studies processes - Inquiry, Values Exploration, and Social Decision Making. A point to remember: the above subjects cover roughly three years of schooling (Years 7, 8 and 9).	In the Finland curriculum geography and biology are integrated.[161] In fact, in grade levels below Grade 7, the outcomes of these two subjects are integrated. Information on Finland scheduling[162] indicates that the subject "Social Studies" is offered in conjunction with History. The main topics of **Social Studies** are as follows: 1. The individual as a member of society 2. Welfare of the Individual

Parameters	United Kingdom	South Australia	New Zealand	Finland
	understanding of events, people and changes in the past , historical interpretation, historical enquiry, and organization & communication. It must be noted that the above list extends over 3 or 4 years of schooling (not just one grade).			3. Exerting influence and decision-making 4. Security of the citizen 5. managing one's finances 6. Economics 7. Economic policy
Grade 9 Main topics and/or general learning outcomes in **Science**	**UK Key Stage 3 (11—14 yrs) Science**[163] has three content strands: ***Life Processes and Living Things—***cells & cell functions, humans as organisms (nutrition, movement, reproduction, breathing, respiration, health), green plants as organisms (nutrition & growth, respiration, variation, classification, inheritance), living things in their environment (adaptation & competition, feeding relationships). ***Materials & their Properties—*** classifying materials (solids, liquids, gas, elements, compounds, mixtures), changing materials (physical change, geological changes, chemical change), patterns of behaviour (metals, acids & bases). ***Physical processes—*** electricity & magnetism (circuits, magnetic fields, electromagnets); forces and motion (linear motion, rotation force & pressure, vibration & sound); light & sound (the behaviour of light, hearing, vibration & sound); the earth & beyond (the solar system); energy resources & energy transfer	**SAu Middle Years Science**[164] is composed of four strands: ***Earth & Space***—changes, both natural and human-induced, preservation of the natural environment; astronomical features and changes as seen from the earth. ***Energy Systems***—obtaining, transferring and using energy; transfer and transformation of energy (force & acceleration, machines & efficiency). ***Life Systems***—functioning of living systems; how living things have changed over geological time, species diversity & the ethics of human intervention; ***Matter***—physical & chemical change; conditions that influence reactions or change in materials (especially preservation of food).	**NZ Level 4 Science** has four strands:[165] ***Living World***—life processes, ecology, evolution. ***Planet Earth & Beyond***—earth systems, interacting systems (e.g., water cycle), astronomical systems. ***Physical World***—movement, forces, electricity and magnetism, light, sound, waves, and heat. ***Material World***—properties & changes of mater, the structure of matter, chemistry & society.	**Finland Biology grades 7—9**[166] has 4 strands: ***Nature & ecosystems***—plant, fungi & animals near pupil's home; features of different ecosystems; forest & crop husbandry; biodiversity. ***Life & evolution***—cell; population; evolution of human; biotechnology & ethics. ***The human being—*** structure & function; sexuality & reproduction; importance of genotype & environment. ***The common environment***—ecological development & environmental sustainability; monitoring the environment & ones related behaviour. **Finland grade 7—9 physics**[167] has 5 strands: ***Motion & force*** (including work and energy)

Parameters	United Kingdom	South Australia	New Zealand	Finland
	(conservation of energy).			***Vibrations & wave motion*** (including sound, light & optical instruments) ***Heat*** (heating & cooling; conservation of energy) Electricity (including magnetism, circuits, safety, electromagnetic induction, and electricity in the home), ***Natural structures*** (including radioactivity) **Finland Grade 7—9 chemistry**[168] has 3 strands: ***Air & water***—(atmospheric substances & environmental equilibrium; acidity & alkalinity; the chemistry of combustion. ***Raw material & products***—(elements & compounds from the earth's crust; electrochemical cell, electrolysis; symbolic representation of compounds & rates; balancing equations; properties & structures of elements & compounds) ***Living nature & society—*** phosynthesis & combustion, energy sources; oxidation reactions & products of organic compound reactions; hydrocarbons & the petroleum refining industry; carbohydrates, proteins & lipids; washing & cosmetic materials, textiles.

APPENDIX 6 Intermediate Program Review (NON-CANADIAN)

Parameters	United Kingdom	South Australia	New Zealand	Finland
Grade 9 Comments on **Science**	Non-content topics permeating the whole course: Scientific enquiry, Communication, Health & safety. Except for the topic "oceanography" done in NL, it is possible to match up the science topics done in NL and UK. Note, however, the inclusion of the earth & solar system under UK "physical processes" In fact, some earth science (but not space science) is done in NL Grade 8.	Also integrated throughout the science program are these affective features: i) the capacity to use, develop and apply scientific knowledge (investigating, explaining and predicting events, communica-ting scientifically, using science to link with, and across, other learning areas. ii) the societal impacts of science, iii) positive attitudes, values and dispositions related to science. The "energy Systems" strand of SAu is done in NL Grade 7 and 8.	In addition to the above content areas, NZ students study the ***Nature of Science***—understanding about science, investigating, communicating, participating & contributing. On comparing with NL, we see, once again, the NZ topic "planet earth & beyond". Some earth science (but not space science) is done in NL Grade 8.	In the Finland curriculum, biology and geography are integrated.[169] In the Finland curriculum physics and chemistry are integrated.[170] It appears that in Finland in grade levels as low as grade 5 the subjects of biology, physics and chemistry are discrete titles (but sometimes integrated) that do not appear in NL until Grade 10.
Grade 9 main topics and/or general learning outcomes in core **French**	The **UK Key Stage 3 Modern Foreign Language (MFL)** curriculum is succinctly presented under two content headings: ***Developing Language Skills*** ***Developing Cultural Aware-ness***	**SAu non-English languages**[171] are grouped under three headings: 1. alphabet languages (e.g., French, German), 2. non-alphabet languages (e.g., Japanese, Chinese), and 3. Aboriginal languages. SAu Language courses have different pathways and entry points, and three strands: ***communication*** ***understanding language*** ***understanding culture***	**NZ Level 4 non-English language** instruction is available in Chinese, Japanese, French, German, and Spanish.[172] The strands closely resemble those of SAu: ***Communication*** ***Language Knowledge*** ***Cultural Knowledge*** In addition, Te reo Māori and New Zealand Sign Language (NZSL) are official languages of New Zealand. Because of New Zealand's close relationships with the peoples of the Pacific, Pasifika languages also have a special place.[173]	**Finland Grades 7—9 foreign language study in English**:[174] ***Communication in specific situations***—leisure, travel, public services, work, health & welfare, etc. ***Structures***—verbs, tenses, nouns, adjectives, pronouns, prepositions, principles of syntax, conjunctive structures. ***Communication strategies***—linguistic and/or situational hints, feedback, approximating, monitoring one's own language usage, learning idioms.

APPENDIX 6 Intermediate Program Review (NON-CANADIAN)

Parameters	United Kingdom	South Australia	New Zealand	Finland
Grade 9 Comments on **French**	A non-content heading is ***Developing language-learning skills*** (i.e., techniques for learning the language). Schools must offer one or more of the official languages of the European Union (Czech, Danish, Dutch, Estonian, Finnish, French, German, modern Greek, Hungarian, Italian, Latvian, Lithuanian, Maltese, Polish, Portuguese, Slovak, Slovenian, Spanish and Swedish). Schools may, in addition, offer any other modern foreign language. It is not clear if students must study a MFL.	In **SAu** Languages there are 2 pathways and 2 entry points as follows: **Pathway 1**: Second language learners-this refers to children and students with little or no prior knowledge of the target language at entry **Pathway 2**: Background learners-this refers to children and students with some prior learning and use of the language at entry. Within each pathway there are two entry points as follows: **Entry Point A**-this refers to children and students who learn the language from Early to Senior Years Bands. **Entry Point B**-this refers to students who learn the language from Middle to Senior Years.	In NZ there are 5 National Advisors to aid teachers and students in the language areas of Chinese, Japanese, French, German and Spanish. The help is the form of • School visits • Information on teaching materials • Courses, workshops and cluster meetings • Advice (in person, by phone, by mail) • Newsletter for teachers • Language days or camps • Promotional materials • Language teachers' register	English appears to be the main foreign language in Finland. Latin is also mentioned in the documentation. Other non-mother tongues are simply referred to as “other foreign languages”, with the interesting inclusion of the mother tongue “Sami” as a foreign language for some students.

APPENDIX 7 INTERNATIONAL EMAILS

Email 1 from UK

Dear Mr Gill,

Thank you for your email dated 05 January 2008 about statutory courses.
In order for me to deal with your enquiry could you please provide some further information.
Is your enquiry regarding school, further or Higher Education courses? Any additional details would be most helpful.
January 7, 2008
Yours sincerely,
Sally Newton
Public Communications Unit

Email 2 from UK
January 17, 2008
Dear Mr Gill
Thank you for your email dated 5 January about the definitions of statutory and non-statutory aspects of our school curriculum in England. I have been asked to reply and feel it may be helpful if I also give some general background.

The national curriculum was introduced to schools in England in 1988, through national legislation, and sets out the statutory entitlement for all pupils up to age 16. It is at its broadest at key stage 3 (age 11-14), when all pupils have to study all subjects.

The national curriculum comprises twelve subjects. These are the three core subjects of English, mathematics and science; together with the nine foundation subjects of design and technology (D&T), information and communication technology (ICT), history, geography, modern foreign languages (MFL), art and design, music, physical education (PE), and citizenship. Each of these subjects has a programme of study which sets out what

pupils should be taught, together with attainment targets which set out the expected standards of pupils' performance at the end of the key stage.
Other compulsory subjects that are not part of the national curriculum are: religious education (RE); the non-science elements of sex and relationships education (SRE - usually delivered within the framework for personal, social, health and economic education (PSHE)); careers education; and work-related learning. There are mixed views on the merits and appropriate content for these subjects, which some consider non-academic, and they do not have the same detail and formality of national attainment targets.

Different combinations of subjects are statutory at each key stage – the table below shows which subjects must be taught to children and young people in each key stage.

- English all key stages
- Mathematics all key stages
- Science all key stages
- ICT all key stages
- D&T key stage 1-3
- History key stage 1-3
- Geography key stage 1-3
- MFL key stage 3
- Art and design key stage 1-3
- Music key stage 1-3
- PE all key stages
- Citizenship key stage 3-4

RE is taught during all four key stages, though parents have the right to withdraw their children from this provision. Careers education and SRE are taught at key stages 3 and 4, and work-related learning is only compulsory at key stage 4.

In addition to the subjects that must be taught at each stage, the national curriculum states that there are a number of areas of learning that should be promoted across the whole of the curriculum. These subjects include:

- Spiritual, moral, social and cultural development
- Personal, social, health and economic education

- Key skills and thinking skills
- Developing financial capability
- Enterprise and entrepreneurial skills
- Education for sustainable development

The subject of PSHE is therefore an example of a subject which is not statutory, but should be taught across all four key stages. We have established a programme of continued professional development (CPD) for teachers of PSHE, and it has its own subject association which teachers can join. PSHE outcomes lie at the heart of many aspects of the Government's agenda for schools, but making a subject statutory does not, of itself, guarantee quality of teaching.

I feel I should also emphasise that the national curriculum is not prescriptive. Instead, it has a clear set of aims and principles and, for each statutory subject, it sets out the key concepts and skills and the essential content that must be covered during each key stage. However, working within the statutory framework, teachers and headteachers have considerable freedom to plan a school curriculum that responds to the personal learning needs of their children, and to introduce new approaches to teaching and learning. For example, once they are satisfied that they are meeting the statutory requirements of each key stage, headteachers can introduce additional content, experiences and subjects, to meet the needs and interests of their pupils.

Although the national curriculum is specified in terms of separate subjects, schools are not required to teach these discretely. How lessons are described and organised is not prescribed and it is for each school to decide the organising structures to use. The Qualifications and Curriculum Authority (QCA) has published guidance on how much time should be allocated to subjects at key stages 1, 2 and 3 but this is only guidance and the time spent on each subject is for the school to decide.
Additionally, you may wish to be aware that it is not necessary to study all national curriculum subjects every week, term or year, so an individual school may decide to concentrate on particular subjects during particular terms or particular years. Furthermore, learning can be paced to fit pupils' needs. Some pupils' learning needs will be better matched by programmes of study from earlier or later key stages. Pupils can take a national test before the end of the key stage if they have completed the programme of study in that subject. For example, the programme of study for a key stage 3 subject could be completed in two years rather than three and the tests

taken a year early. The results of the tests would be published in the year that they were taken, not when the pupils reached the normal age that the tests were taken.
As they progress into key stage 4, young people choose the subjects their wish to study as they prepare for examinations. Changes in the key stage 4 curriculum in 2004 mean that schools are no longer required to teach MFL and D&T to all pupils. Instead there are four entitlement areas - arts, D&T, humanities, and MFL. Schools must ensure that students within key stage 4 are able to follow a course of study in a subject within each of the entitlement areas if they wish to do so. We made these changes to create flexibility so that young people can pursue their talents and aspirations while maintaining a strong focus on the basics.

Yours sincerely, Pete Jinks, Public Communications Unit

Email 1 from Finland

Dec 19, 2007
Hello,
The Finnish education system is composed of nine-year basic education (comprehensive school), preceded by one year of voluntary pre-primary education; upper secondary education, comprising vocational and general education; and higher education, provided by universities and polytechnics. Adult education is available at all levels.
One way to describe or compare educational systems is OECDs(?) international ISCED-clasification. You'll find picture of Finnish system + these levels:
http://www.minedu.fi/export/sites/default/OPM/Koulutus/koulutusjaerjestelmae/liitteet/finnish_education.pdf

More detailed information You´ll find e.g. through the Eurydices database: http://www.eurydice.org/portal/page/portal/Eurydice/ByCountryResults?countryCode=FI

Best regards
Jaana Luostarinen

Email 2 from Finland

Dec 20, 2007

Hello again,

The syllabus of basic education includes the following subjects common to all pupils: mother tongue and literature (i.e. Finnish or Swedish), the other national language (i.e. Swedish or Finnish), foreign languages, environmental studies, health education, religion or ethics, history, social studies, mathematics, physics, chemistry, biology, geography, physical education, music, visual arts, craft and home economics. In addition to these, pupils may also have the option to study other subjects suitable to basic education, according to the provisions of the curriculum. These subjects may be partially or completely optional or elective for pupils.

The Government decides on the overall time allocation by defining the minimum number of weekly lessons per year for common subjects. In forms 7–9 (appr. 13-15 years old), instruction and educational guidance cover an average minimum of 30 weekly lessons. the Basic Education Act regulates the subjects included in the curriculum . Also elective subjects are included in the curriculum and pupils' parents or other guardians decide which of the elective subjects on offer the pupil will take.

The national core curriculum includes e.g. the objectives and core contents of different subjects. The education providers, usually the local education authorities and the schools themselves draw up their own curricula within the framework of the national core curriculum.

Further information:
National Core Curriculum http://www.oph.fi/english/page.asp?path=447,27598,37840,72101,72106
Basic Education Act http://www.finlex.fi/en/laki/kaannokset/1998/en19980628.pdf
Basic Education Decree
http://www.minedu.fi/export/sites/default/OPM/Koulutus/yleissivistaevae_koulutus/Liitetiedostoja/basicedu_decree.pdf Jaana Luostarinen

Email 3 from Finland

Hello,
further information available...(see below)

Jaana Luostarinen

Lähettäjä: Lloyd Gill [mailto:l.gill@nl.rogers.com]
Postitettu: 21. joulukuuta 2007 19:43
Postituskansio: webmaster@minedu.fi
Keskustelu: Palaute
Aihe: Re: Palaute

Thank-you very much for your prompt reply. I hope I can bother you with a few more speciifc questions:

1. In forms 7-9 how is "social studies" different from history & geography?

> According to core curriculum the subject areas of the social studies are Finnish society and economic life + European Union. The task of instruction is to provide basic knowledge and skills conserning the structure and operation of society and the citizen´s opportunities for influence. The task of history instruction is to familiarize pupil with the basic consepts of historical knowledge, their own roots and certain historical events and phenomena. In geographpy the world and its various regions come under examination.

2. Approximately how many minutes per week would be given to the teaching of each of the following in forms 7-9?: mother tonque & literature; foreign languages; mathematics; history; geography; social studies?

> *The minimum number of lessons in annual weekly lessons: http://www.minedu.fi/export/sites/default/OPM/Koulutus/yleissivistaevae_koulutus/Liitetiedostoja/distribution_of_lesson_hours_in_basic_educ.xls (A lesson usually lasts 60 minutes; instruction accounts for at least 45 minutes and the remaining time is used for a break)*

3. In forms 7-9 are chemistry, physics and biology separate subjects or are they grouped into one subject (for example, science)? How many minutes per week are used in total in science areas in forms 7-9?

> *Biology and geography + physics and chemistry are integrated. Number of lessons You´ll find through the same link*

Thank-you again,
Lloyd Gill

APPENDIX 7 INTERNATIONAL EMAILS

ENDNOTES

ENDNOTES FOR APPENDIX 1

[1] See http://www.ed.gov.nl.ca/edu/sp/intermed/core_french/int_cf.pdf

[2] NL Grades 7-9 Program of Studies at http://www.ed.gov.nl.ca/edu/sp/pos/2007-08/7-intermediate.pdf

[3] PEI Grades 7-9 Program of Studies at http://www.gov.pe.ca/educ/index.php3?number=74904&lang=E

[4] NS list of Grades 7-9 Courses at http://www.ednet.ns.ca/pdfdocs/psp/psp_03_04_full.pdf

[5] NB list of grade 7 and 8 courses at http://www.gnb.ca/0000/anglophone-e.asp#cd

[6] Ontario list of Grade 7 and 8 courses at http://www.edu.gov.on.ca/eng/curriculum/elementary/grade7.html

[7] WNCP courses at http://www.wncp.ca/

[8] Alberta "optional" courses at http://www.cmec.ca/tguide/2004/ab.en.html#id2451428

[9] BC Grade 7-9 courses at http://www.bced.gov.bc.ca/irp_resources/lr/resource/gradcoll.htm

[10] See ICT in BC at http://www.bced.gov.bc.ca/irp/it810.pdf

[11] NL Grade 7 Language Arts at http://www.ed.gov.nl.ca/edu/sp/eng_langarts_inter.htm

[12] PEI Grade 7 Language Arts at http://www.gov.pe.ca/educ/index.php3?number=74902&lang=E

[13] NS Grade 7 Language Arts at https://sapps.ednet.ns.ca/Cart/index.php?UID=20071201092532205.251.23.247

[14] NB Grade 7-9 Language Arts at http://www.gnb.ca/0000/anglophone-e.asp#cd

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[15] Ontario Grade 7 Language at http://www.edu.gov.on.ca/eng/curriculum/elementary/grades.html

[16] WNCP Grade 7-9 Language Arts at http://www.wncp.ca/

[17] Ontario Grade 7-8 Language document at http://www.edu.gov.on.ca/eng/curriculum/elementary/language18currb.pdf

[18] NL Grade 7 mathematics at http://www.ed.gov.nl.ca/edu/sp/intermediate.htm

[19] PEI Grade 7-9 mathematics at http://www.gov.pe.ca/educ/index.php3?number=74883&lang=E

[20] NS Grade 7-9 Mathematics at https://sapps.ednet.ns.ca/Cart/index.php?UID=20071201095926205.251.23.247

[21] NB Grade 7-9 Mathematics at http://www.gnb.ca/0000/anglophone-e.asp#cd

[22] Ontario Mathematics grades 1-8 at http://www.edu.gov.on.ca/eng/curriculum/elementary/math18curr.pdf

[23] WNCP Grade 7-9 mathematics at http://www.wncp.ca/

[24] NL Grade 7 Social Studies at http://www.ed.gov.nl.ca/edu/sp/intermediate.htm

[25] PEI Grade 7-9 Social Studies at http://www.gov.pe.ca/educ/index.php3?number=74883&lang=E

[26] NS Grade 7 Social Studies at https://sapps.ednet.ns.ca/Cart/description.php?II=197&UID=2008032215395272.139.89.167

[27] NB Grade 7-9 Social Studies at http://www.gnb.ca/0000/anglophone-e.asp#cd

[28] Ontario Grades 7-9 Social Studies at http://www.edu.gov.on.ca/eng/curriculum/elementary/grade7.html

[29] WNCP Grade 7 Social Studies at http://www.wncp.ca/socialst/social.pdf

ENDNOTES

[30] NL Grade 7 Science is approaching final draft form and is available from the NL Provincial Department of Education.

[31] PEI Grades 7-9 Science at http://www.gov.pe.ca/educ/index.php3?number=74883&lang=E

[32] NB Grades 7-9 Science at http://www.gnb.ca/0000/anglophone-e.asp#cd

[33] Ontario Grade 7 Science & Technology at http://www.edu.gov.on.ca/eng/curriculum/elementary/scientec18curr.pdf

[34] Alberta Grade 7 Science at http://www.education.gov.ab.ca/k_12/curriculum/bySubject/science/sci7to9.pdf

[35] BC Grades 7-9 Science at http://www.bced.gov.bc.ca/irp/lo.htm

[36] NL Grade 7-9 Core French at http://www.ed.gov.nl.ca/edu/sp/inter_corefrench.htm

[37] PEI Grades 7-9 French at http://www.gov.pe.ca/educ/index.php3?number=74883&lang=E

[38] NB Grade 7 Core French is available in French only at http://www.gnb.ca/0000/publications/curric/CURRICULUMGUIDE6-8.pdf

[39] Ontario Grade 7 Core French at http://www.edu.gov.on.ca/eng/curriculum/elementary/fsl48curr.pdf

[40] AB Grade 7-9 Core French at http://www.education.gov.ab.ca/french/FLA/

[41] BC Grade 7-9 Core French at http://www.bced.gov.bc.ca/irp/lo.htm

ENDNOTES FOR APPENDIX 2

[42] NL Grades 7-9 Program of Studies at http://www.ed.gov.nl.ca/edu/sp/pos/2007-08/7-intermediate.pdf

[43] PEI Grades 7-9 Program of Studies at http://www.gov.pe.ca/educ/index.php3?number=74904&lang=E

[44] NS list of Grades 7-9 Courses at http://www.ednet.ns.ca/pdfdocs/psp/psp_03_04_full.pdf

ENDNOTES

[45] See NB list of grade 7 and 8 courses at http://www.gnb.ca/0000/anglophone-e.asp#cd

[46] See Ontario list of Grade 7 and 8 courses at http://www.edu.gov.on.ca/eng/curriculum/elementary/grade7.html

[47] See WNCP courses at http://www.wncp.ca/

[48] See Alberta “optional” courses at http://www.cmec.ca/tguide/2004/ab.en.html#id2451428

[49] BC Grade 7-9 courses at http://www.bced.gov.bc.ca/irp_resources/lr/resource/gradcoll.htm

[50] NL Grade 8 Language Arts at http://www.ed.gov.nl.ca/edu/sp/eng_langarts_inter.htm

[51] PEI Grade 8 language Arts at http://www.gov.pe.ca/educ/index.php3?number=74902&lang=E

[52] NS Grade 8 language Arts at https://sapps.ednet.ns.ca/Cart/index.php?UID=20071201092532205.251.23.247

[53] NB Grade 8 Language Arts at http://www.gnb.ca/0000/anglophone-e.asp#cd

[54] Ontario Grade 8 Language at http://www.edu.gov.on.ca/eng/curriculum/elementary/grades.html

[55] WNCP Grade 7-9 Language Arts at http://www.wncp.ca/

[56] Ontario Grade 7-8 Language Arts document at http://www.edu.gov.on.ca/eng/curriculum/elementary/language18currb.pdf

[57] NL Grades &-9 mathematics at http://www.ed.gov.nl.ca/edu/sp/pcdbs.htm

[58] PEI Grade 7-9 Mathematics at http://www.gov.pe.ca/educ/index.php3?number=74883&lang=E

[59] NB Grade 8 mathematics at http://www.gnb.ca/0000/anglophone-e.asp#cd

[60] Ontario Mathematics Grade 1-8 at http://www.edu.gov.on.ca/eng/curriculum/elementary/math18curr.pdf

ENDNOTES

[61] WNCP Grades 7-9 Mathematics at http://www.wncp.ca/

[62] Nl Grades 7-9 Social Studies at http://www.ed.gov.nl.ca/edu/sp/pcdbs.htm

[63] PEI Grades 7-9 Social Studies at http://www.gov.pe.ca/educ/index.php3?number=74883&lang=E

[64] NB Grades 7-9 Social Studies at http://www.gnb.ca/0000/anglophone-e.asp#cd

[65] Ontario Grade 7-9 Social Studies at http://www.edu.gov.on.ca/eng/curriculum/elementary/grade7.html

[66] WNCP Grade 8 Social Studies at http://www.wncp.ca/socialst/social.pdf

[67] NL Grade 8 Science is approaching final draft form and is available from the NL Provincial Department of Education.

[68] PEI Grade 8 science at http://www.gov.pe.ca/photos/original/ed_gr8_sciguide.pdf

[69] NS grade 8 science at http://www.ednet.ns.ca/pdfdocs/curriculum/science8web.pdf

[70] NB Grade 8 science at http://www.gnb.ca/0000/publications/curric/grade8science.pdf

[71] Ontario Grade 8 science & technology at http://www.edu.gov.on.ca/eng/curriculum/elementary/scientec18curr.pdf

[72] Alberta Grade 8 Science at http://www.education.gov.ab.ca/k_12/curriculum/bySubject/science/sci7to9.pdf

[73] BC Grade 8 Science at http://www.bced.gov.bc.ca/irp/science810/sci8_los.pdf

[74] NL Grade 8 Core French at http://www.ed.gov.nl.ca/edu/sp/inter_corefrench.htm

[75] PEI Grade 8 Core French document at http://www.gov.pe.ca/photos/original/edu_fr_pro_7-8.pdf

[76] NB Grade 8 Core French available on-line in French only at http://www.gnb.ca/0000/publications/curric/CURRICULUMGUIDE6-8.pdf

[77] Ontario Grade 8 Core French at http://www.edu.gov.on.ca/eng/curriculum/elementary/fsl48curr.pdf

[78] AB Grades 7-9 Core French at http://www.education.gov.ab.ca/french/FLA/

[79] BC Grade 8 Core French at http://www.bced.gov.bc.ca/irp/cfrench512/apa8lo.htm#ai

ENDNOTES FOR APPENDIX 3

[80] NL Grades 7-9 Program of Studies at http://www.ed.gov.nl.ca/edu/sp/pos/2007-08/7-intermediate.pdf

[81] PEI Grades 7-9 Program of Studies at http://www.gov.pe.ca/educ/index.php3?number=74904&lang=E

[82] NS list of Grades 7-9 Courses at http://www.ednet.ns.ca/pdfdocs/psp/psp_03_04_full.pdf

[83] NB High School Programs at http://www.gnb.ca/0000/anglophone-e.asp#cd

[84] ON Grade 9 courses can be found at http://www.edu.gov.on.ca/eng/curriculum/secondary/grade9.html

[85] WNCP courses at http://www.wncp.ca/

[86] AB "optional" courses at http://www.cmec.ca/tguide/2004/ab.en.html#id2451428

[87] See Email 2 from NB in APPENDIX 4 NATIONAL EMAILS

[88] BC Grade 7-9 courses at http://www.bced.gov.bc.ca/irp_resources/lr/resource/gradcoll.htm

[89] See ICT in BC at http://www.bced.gov.bc.ca/irp/it810.pdf

[90] NL Grade 9 Language Arts at http://www.ed.gov.nl.ca/edu/sp/eng_langarts_inter.htm

[91] PEI Grade 9 language Arts at http://www.gov.pe.ca/educ/index.php3?number=74902&lang=E

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[92] NS Grade 9language Arts at https://sapps.ednet.ns.ca/Cart/index.php?UID=20071201092532205.251.23.247

[93] NB Grade 9 Language Arts at http://www.gnb.ca/0000/anglophone-e.asp#cd

[94] ON Grade 9 English at http://www.edu.gov.on.ca/eng/curriculum/secondary/grade9.html

[95] WNCP Grade 7-9 Language Arts at http://www.wncp.ca/

[96] NL Grade 9 mathematics at http://www.ed.gov.nl.ca/edu/sp/math_gr9_interim.htm

[97] PEI Grade 7-9 Mathematics at http://www.gov.pe.ca/educ/index.php3?number=74883&lang=E

[98] NB Grade 9 Mathematics at http://www.gnb.ca/0000/anglophone-e.asp#cd

[99] ON Grade 9 Mathematics at http://www.edu.gov.on.ca/eng/curriculum/secondary/grade9.html

[100] WNCP Grades 7-9 Mathematics at http://www.wncp.ca/

[101] NL Grade 9 Social Studies at http://www.ed.gov.nl.ca/edu/sp/global_comm_gr9.htm

[102] PEI Grade 9 Social Studies at http://www.gov.pe.ca/photos/original/ed_ips_0708.pdf

[103] NS Grade 9 Social Studies at http://www.ednet.ns.ca/pdfdocs/curriculum/global-community.pdf

[104] NB Grades 7-9 Social Studies at http://www.gnb.ca/0000/anglophone-e.asp#cd

[105] ON Canadian and World Studies at http://www.edu.gov.on.ca/eng/curriculum/secondary/grade9.html

[106] WNCP SS at http://www.wncp.ca/socialst/social.pdf

[107] NS Grade 9 SS supplement at http://www.ednet.ns.ca/pdfdocs/curriculum/ced.pdf

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[108] NL Grade 8 Science is approaching final draft form and is available from the NL Provincial Department of Education.

[109] PEI Grade 9 science at http://www.gov.pe.ca/photos/original/ed_gr9_sciguide.pdf

[110] NB Grade 9 Science at http://www.gnb.ca/0000/publications/curric/grade9science.pdf

[111] ON Grade 9 Science at http://www.edu.gov.on.ca/eng/curriculum/secondary/science910curr.pdf

[112] AB Science at http://www.education.gov.ab.ca/k_12/curriculum/bySubject/science/sci7to9.pdf

[113] BC Grade 9 Science at http://www.bced.gov.bc.ca/irp/science810/sci9_los.pdf

[114] NL Grade 8 Core French at http://www.ed.gov.nl.ca/edu/sp/inter_corefrench.htm

[115] PE Grade 9 French at http://www.gov.pe.ca/educ/index.php3?number=79178&lang=E

[116] NB French at http://www.gnb.ca/0000/publications/curric/imeng.pdf

[117] ON Grade 9 French at http://www.edu.gov.on.ca/eng/curriculum/secondary/grade9.html

[118] AB Grades 7-9 Core French at http://www.education.gov.ab.ca/french/FLA/

[119] BC Grade 9 French at http://www.bced.gov.bc.ca/irp/cfrench512/apa9lo.htm

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[120] See page 31 of http://www.gov.pe.ca/photos/original/ed_ips_0708.pdf

[121] PEI Grades 7-9 Program of Studies at http://www.gov.pe.ca/educ/index.php3?number=74904&lang=E

[122] See p. B-12 at http://www.ednet.ns.ca/pdfdocs/psp/psp_03_04_full.pdf

ENDNOTES

[123] NS Mathematics and Language Arts time allotment at http://www.ednet.ns.ca/pdfdocs/time_to_learn/instructional_time_7-8.pdf

[124] NS Core French time allotment at http://www.ednet.ns.ca/pdfdocs/time_to_learn/instructional_time_7-8.pdf

[125] NS French Immersion time allotment at allotment http://www.ednet.ns.ca/pdfdocs/time_to_learn/app_b_psp_extracts.pdf

[126] See pp. 5-6, *NB Grades 9/10 Companion Document* at http://www.gnb.ca/0000/publications/curric/Grade_910Companion.pdf

[127] For ON one-credit course see p. 6 of http://www.edu.gov.on.ca/eng/curriculum/secondary/progplan912curr.pdf

[128] Alberta time allotments can be found at http://www.cmec.ca/tguide/2004/index.en.html

[129] Additional information on time allotments in AB at http://www.education.gov.ab.ca/k_12/curriculum/instruct_time.pdf

[130] A statement on BC time allotments can be found at http://www.cmec.ca/tguide/2004/index.en.html

[131] Government of Manitoba. *Manitoba Curriculum Development and Implementation.* http://www.edu.gov.mb.ca/k12/cur/english_pr.html

[132] Government of Saskatchewan, Saskatchewan Learning. (2007). *Core Curriculum: Principles, Time Allocations, and Credit Policy (Saskatchewan Learning, August.* http://www.publications.gov.sk.ca/details.cfm?p=24267

ENDNOTES FOR APPENDIX 6

[133] UK National Curriculum at http://www.nc.uk.net/nc_resources/html/ks3and4.shtml

[134] SA Middle Years Program at http://www.sacsa.sa.edu.au/index_fsrc.asp?t=Home

[135] See NZ years and curriculum levels at http://nzcurriculum.tki.org.nz/the_new_zealand_curriculum Click on “Curriculum achievement objectives by level.”

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[136] NZ curriculum at http://nzcurriculum.tki.org.nz/

[137] See the National Core Curriculum of Finland at http://www.oph.fi/english/page.asp?path=447,27598,37840,72101,72106

[138] Finland Education Act at http://www.finlex.fi/en/laki/kaannokset/1998/en19980628.pdf

[139] Nee note on UK ICT at http://www.nc.uk.net/nc_resources/html/ict.shtml

[140] NZ Early Childhood Education at http://www.minedu.govt.nz/web/downloadable/dl7648_v1/english.plan.art.pdf

[141] NZ Education System in diagram form at http://www.minedu.govt.nz/web/downloadable/dl11630_v1/nz-education-system-p130.pdf

[142] NZ "Curriculum Objectives by Level" may be linked at http://nzcurriculum.tki.org.nz/the_new_zealand_curriculum

[143] NZ Career Education, Sex Education and the Law and RE at
http://www.teamup.co.nz/secondary/about/Schools+responsibilities+to+parents.htm#Career_education

[144] See pictorial representation of Finnish Education at
http://www.minedu.fi/export/sites/default/OPM/Koulutus/koulutusjaerjestelmae/liitteet/finnish_education.pdf

[145] See p. 19 of http://www.minedu.fi/export/sites/default/OPM/Julkaisut/2006/liitteet/eng_opm15.pdf?lang=en
[146] UK Key Stage 3 English at
http://www.nc.uk.net/webdav/harmonise?Page%2F@id=6004&Session%2F@id=D_NTPS7VVwG9ynaEet4DCy&Subject%2F@id=5985

[147] SAu English at the "middle school" link at http://www.sacsa.sa.edu.au/index_fsrc.asp?t=LA

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[148] NZ Level 4 English at
http://nzcurriculum.tki.org.nz/the_new_zealand_curriculum/learning_areas/english/english_curriculum_achievement_objectives__1#level%204

[149] Finnish Mother Tongue and Literature on page 51 at http://www.oph.fi/ops/english/POPS_net_new_2.pdf

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[150] UK Keystage 3 mathematics at http://www.nc.uk.net/webdav/harmonise?Page%2F@id=6004&Session%2F@id=D_NTPS7VVwG9ynaEet4DCy&Subject%2F@id=22

[151] SAu mathematics at the "middle school" link at http://www.sacsa.sa.edu.au/index_fsrc.asp?t=LA

[152] NZ Level 4 mathematics at http://nzcurriculum.tki.org.nz/the_new_zealand_curriculum/learning_areas/mathematics_and_statistics/mathematics_and_statistics_curriculum_achievement_objectives#level%204

[153] Finland mathematics on p. 163 at http://www.oph.fi/ops/english/POPS_net_new_3.pdf

[154] UK Key Stage 3 Geography at http://www.nc.uk.net/webdav/harmonise?Page/@id=6001&Session/@id=D_itARLtMefdkhlt2yT7kf&POS[@stateId_eq_main]/@id=3537&POS[@stateId_eq_note]/@id=3550

[155] UK Key Stage 3 History at http://www.nc.uk.net/webdav/harmonise?Page/@id=6001&Session/@id=D_ksWf87EiaN7ly9g12usq&POS[@stateId_eq_main]/@id=3301&POS[@stateId_eq_note]/@id=3301

[156] SAu Society & Environment at http://www.sacsa.sa.edu.au/index_fsrc.asp?t=LA Click on "society & environment" and then "Middle years".

[157] NZ Level Social Studies at http://www.tki.org.nz/r/socialscience/curriculum/chart_e.php

[158] Finland grade 7-9 geography on p. 182 at http://www.oph.fi/ops/english/POPS_net_new_3.pdf

[159] Finland Grade 7—9 History on p. 222 at http://www.oph.fi/ops/english/POPS_net_new_4.pdf

[160] SAu information on Crime Prevention Education at http://www.sacsa.sa.edu.au/index_fsrc.asp?t=LA&ID=CRIME

[161] See "Email 3 from Finland" in APPENDIX 7 INTERNATIONAL EMAILS

[162] For detail on Finland's "lesson-hours" per subject see "New distribution of lesson hours in basic education" in Appendix 2.

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[163] UK Key Stage 3 Science at http://www.nc.uk.net/webdav/harmonise?Page/@id=6001&Session/@id=D_fePjwiwzsa0PRptyhtYi&POS[@stateId_eq_main]/@id=6569&POS[@stateId_eq_note]/@id=6569

[164] SAu Science at http://www.sacsa.sa.edu.au/index_fsrc.asp?t=LA Click on “science”, then “middle school”.

[165] NZ Level 4 Science at http://nzcurriculum.tki.org.nz/the_new_zealand_curriculum/learning_areas/science/science_curriculum_achievement_aims_and_objectives#level%204

[166] Finland biology on page 179 at http://www.oph.fi/ops/english/POPS_net_new_3.pdf

[167] Finland grade 7—9 physics on p. 189 at http://www.oph.fi/ops/english/POPS_net_new_3.pdf

[168] Finland Grades 7—9 chemistry on p. 192 at http://www.oph.fi/ops/english/POPS_net_new_3.pdf

[169] See “Email 3 from Finland” in APPENDIX 7 INTERNATIONAL EMAILS

[170] See “Email 3 from Finland in APPENDIX 7 INTERNATIONAL EMAILS

[171] SAu languages at http://www.sacsa.sa.edu.au/index_fsrc.asp?t=LA Click on “languages” and follow the appropriate links.

[172] NZ “foreign” language offerings are at http://www.tki.org.nz/e/community/language/nat_ad.php

[173] NZ and Pacific language information at http://nzcurriculum.tki.org.nz/the_new_zealand_curriculum/learning_areas/learning_languages

[174] Finland foreign language study in English on p. 142 at http://www.oph.fi/ops/english/POPS_net_new_3.pdf