

Review of the National Curriculum in England

Report on subject breadth in international jurisdictions

The views expressed in this report are the authors' and do not necessarily reflect those of the Department for Education.

INCA Enquiry: Curriculum organisation and content

To support the review of the National Curriculum, the National Foundation for Educational Research (NFER) was commissioned by the Department for Education in the spring of 2011 to produce a report detailing curricular arrangements in a number of high-performing educational jurisdictions. The principal source of information for this report has been the International Review of Curriculum and Assessment Frameworks Archive (INCA), the content of which is managed by NFER. INCA provides descriptions of government policy on education in 21 countries worldwide, focusing on curriculum, assessment and initial teacher training frameworks for pre-school, primary, lower secondary and upper secondary education in schools (3-19 age range). The majority of educational jurisdictions selected for inclusion in the report have scored highly in recent international surveys of educational performance including PISA, TIMSS and PIRLS.

This report describes the organisation and content of school curricula in the following countries and jurisdictions:

- Australia, specifically including Victoria;
- Canada, specifically including Alberta and Ontario;
- Finland;
- France;
- Hungary;
- Japan;
- Korea;
- The Netherlands;
- New Zealand;
- Singapore; and
- USA, specifically including Massachusetts.

The report includes information about: curriculum structure and organisation; curriculum review processes; lower secondary qualifications; and compulsory and optional curriculum subjects at different educational phases.

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1. Australia

1.1 Curriculum Structure and Organisation

The Australian Curriculum, Assessment and Reporting Authority (ACARA) is in the process of developing an Australia-wide curriculum from Kindergarten Year to Year 12 (ages five to 18). There has not previously been a national curriculum in Australia.

The Australian Curriculum will eventually be developed for all learning areas and subjects set out in the Melbourne Declaration¹. It describes a learning entitlement for all children and young people that provides a foundation for successful, lifelong learning and participation in the Australian community.

The Foundation to Year 10 (age 6 to age 16) Australian Curriculum for English, maths, science and history is available for implementation. Shape papers and draft curricula for geography, languages and the arts will be published for consultation during 2011. Similarly, consultation will occur for the final curriculum areas (economics, business, civics and citizenship, health and physical education, and information and communication technology and design and technology) as they are developed; they are expected in 2012.

There will also be some form of Australian curriculum for the final two years of school, i.e. senior secondary (students aged 16 to 18).

The Australian Curriculum sets out the core knowledge, understanding, skills and general capabilities important for all Australian students. It describes the learning entitlement of students as a foundation for their future learning, growth and active participation in the Australian community. It makes clear what all young Australians should learn as they progress through schooling. **Content descriptions** specify what teachers are expected to teach.

Each learning area or subject includes:

- a statement of rationale and a set of aims;
- an overview of how the learning area is organised;

¹ **Melbourne Declaration on Educational Goals for Young Australians:** In December 2008, State, Territory and Commonwealth Ministers of Education meeting as the Ministerial Council on Education, Employment, Training and Youth Affairs, released the 'Melbourne Declaration on Educational Goals for Young Australians' which sets the direction for Australian schooling for the next 10 years. The goals of the Declaration are to promote equity and excellence and that all young Australians become successful learners, confident and creative individuals, and active and informed citizens. The Declaration discusses the following subject areas: English, mathematics, science (including physics, chemistry and biology), humanities and social science (including history, geography, economics, business, civics and citizenships) with a strong focus on equipping students with the skills (literacy, numeracy, ICT, social and emotional intelligence, mature student well-being) they will need for future study and adult life. It supersedes 'The Adelaide Declaration'. Further information: http://www.mceecdya.edu.au/mceecdya/melbourne_declaration,25979.html

- year level descriptions;
- content descriptions (knowledge, understanding and skills) specifying what teachers are expected to teach;
- content elaborations to provide additional clarity by way of illustrative examples only;
- achievement standards that describe the quality of learning (the depth of understanding, extent of knowledge and sophistication of skill) expected of students at points in their schooling;
- annotated student work samples that illustrate the achievement standard at each year level;² and
- a glossary to support consistent understanding of terms used.

The learning areas will not carry equal weight /not be of equal importance at all year levels. English and maths will be of fundamental importance throughout, and will be the primary focus of learning in the early years. Humanities and social sciences will take on greater scope and increasing specialisation as students move through the years of schooling. Each learning area has a specific discipline base and application across the curriculum. In addition, a focus on environmental sustainability will be integrated across the curriculum and all students will have the opportunity to access indigenous content where relevant.

‘General capabilities’, which should be addressed across the curriculum, are also included in the new Australian National Curriculum. These are:

- literacy;
- numeracy;
- ICT;
- thinking skills;
- creativity;
- self-management;
- teamwork;
- intercultural understanding;
- ethical behaviour; and
- social competence.

In addition, the curriculum will include the ‘cross-curriculum perspectives’ of:

- Indigenous perspectives: these will be written into the Australian National Curriculum to ensure that all young Australians have the opportunity to learn about, acknowledge and respect the culture of Aboriginal people and Torres Strait Islanders;

² As the Australian Curriculum is implemented, the available work samples will be enhanced in both volume and range of forms.

- A commitment to sustainable patterns of living;
- Skills, knowledge and understandings related to Asia and Australia's engagement with Asia.

General capabilities and cross-curriculum perspectives will be represented in learning areas in ways appropriate to that area. The curriculum documents will also indicate how connections can be made between discipline areas, and how particular general capabilities and cross-curriculum perspectives will be explicitly dealt with in each learning area.

The Australian Curriculum focuses on an entitlement for all students while acknowledging that the needs and interests of students vary. As a result, the curriculum sets out what is expected for all students to learn as well as articulating additional learning options.

It is intended that jurisdictions, systems and schools will be able to implement the Australian Curriculum in ways that value teachers' professional knowledge, reflect the local contexts and take into account the individual's family, culture and community background. ACARA works with state and territory curriculum and school authorities to develop implementation plans. See the Victorian description for details of how one State is tackling the implementation.

The curriculum is available: <http://www.australiancurriculum.edu.au>

Senior secondary

There will also be some form of Australian Curriculum for the final two years of school, i.e. senior secondary (students aged 16 to 18). Curricula for English, mathematics, science and history have been published and are being revised following consultation. ACARA will also develop the Australian Curriculum for the senior secondary years across a range of learning areas. States and territories will though continue to offer their own subjects and courses that do not overlap significantly with the Australian Curriculum. They will also determine assessment, certification and quality assurance requirements of Australian Curriculum courses. There will be no changes to senior secondary studies as a result of the Australian Curriculum before 2014.

1.2 Curriculum review

Implementation of the curriculum began in 2011.

It is expected that all states and territories will have made substantial progress towards implementation of the new curriculum by 2013.

The first Australian National Curriculum is in the process of development. Development is being shaped by the following principles and guidelines:

- The curriculum should make clear to teachers what is to be taught, and to students what they should learn and what achievement standards are expected of them. This means that curriculum documents will be explicit about knowledge, understanding and skills, and that they will provide a clear foundation for the development of a teaching programme;
- The curriculum should be based on the assumptions that all students can learn and that every student matters. It should set high standards and ensure that they apply to all young Australians while acknowledging the different rates at which students develop;
- The curriculum should connect with, and build on, the Early Years Learning Framework being developed for the pre-Kindergarten (under five) phase;
- The curriculum should help prepare all young Australians to become fulfilled and competent citizens and workers. It should build firm and meaningful foundational skills as well as provide the basis for developing expertise for those who move on to specialised advanced studies in academic disciplines, professions and technical trades. It should anticipate an increase in both the proportion of students who remain in education and training to complete Year 12 or equivalent vocational education and training, and the proportion who continue to further study;
- The curriculum should provide students with an understanding of the past that has shaped the society, culture and environment in which they are growing and developing, and with knowledge, understandings and skills that will help them in their futures;
- The curriculum should be feasible, taking account of the time and resources available to teachers and students, and the time it typically takes to learn complex concepts and ideas. In particular, the National Curriculum should recognise and appreciate that, in the primary years, teachers are responsible for several learning areas;
- The primary audience for National Curriculum documents should be classroom teachers. Documents should be concise and expressed in plain language, which nevertheless preserves a complexity in ideas appropriate for professional practitioners. Documents should be recognisably similar across learning areas in language, structure and length;
- Time demands on students must leave room for learning beyond the scope of the National Curriculum;
- The curriculum should allow jurisdictions, systems and schools to implement it in a way that values teachers' professional knowledge and that reflects the needs and interests evident in local contexts, as it will be teachers who decide how best to organise learning for students. Organisation of learning should take account of individual family, cultural and community backgrounds; acknowledge and build on prior learning experiences; and fill gaps in those experiences;
- The curriculum should be established on a strong evidence base related to learning, pedagogy and what works in professional practice, and it should encourage teachers to analyse and evaluate their practices systematically.

A review cycle has not yet been established for the new curriculum.

1.3 Lower secondary qualifications

Secondary education is available for either five or six years (depending on the length of primary education in the State concerned) and students normally commence lower secondary school at around age 12. Secondary education is usually compulsory until the age of 15 or 16, except in Queensland and Tasmania.

In Queensland, since 2006, it has been compulsory for young people to remain at school until they finish Year 10 (ages 15-16) or reach their 16th birthday, whichever comes first. Unless they are in full-time work, young people who have finished Year 10 or reached the age of 16 are then required to participate in education and training for:

- a further two years, or
- until they have gained a Senior Certificate, or
- until they have gained a specific level of vocational qualification, or
- until they have turned 17.

In Tasmania, legislation introduced in January 2008 introduced requirements which mean that, after leaving Year 10 (at around age 16), young people must continue in education or training for two years or until they turn 17.

Assessment arrangements are the responsibility of individual States and Territories, but there are no qualifications at the end of lower secondary education.

There is no national system of assessment for students at the end of lower secondary education, but every State and Territory has an external certification system in Year 12 (students aged around 18). This has the double purpose of certifying (compulsory and post-compulsory) school completion and ranking students for entry to tertiary institutions.

1.4 Curriculum subjects

To date the approved subjects/learning areas in the new Australian National Curriculum are English, mathematics, science and history. The second phase of the Australian Curriculum development, currently underway, involves geography, languages and the arts. The final stages of development will cover economics, business, civics and citizenship, health and physical education, and information and communication technology and design and technology.

Schools, with guidance and advice from federal bodies and ACARA, implement the curriculum in the way they wish.

There are no statutory time allocations for individual curriculum subjects.

2. Australia - Victoria

2.1 Curriculum structure and organisation

The Victorian Essential Learning Standards (VELS) outline what is essential for all Victorian students to learn during their time at school from Preparatory Year to Year 10 (age five/six to 15/16). They also provide a set of common state-wide standards which schools use to plan student learning programmes, assess student progress and report to parents. They were released in 2005; implementation in schools began in 2006.

The VELS are organised into three inter-related areas called 'strands'. Each strand (Physical, Personal and Social Learning; Discipline-based Learning; Interdisciplinary Learning) has domains which are a distinct body of knowledge, skills and behaviours. Standards for each domain are organised into dimensions.

As mentioned above, the VELS also provide a set of state-wide standards for assessment of student achievement at six levels. These levels are broadly related to school year levels (see tables 2 to 4 in section 2.4 Curriculum Subjects for further detail).

In Prep (Preparatory Year - children aged five to six), students focus on the foundational areas of literacy and numeracy and on socialisation skills. As students move through the school years, standards are introduced from other areas of the curriculum when they become developmentally appropriate to the student. The standards steadily become more challenging as students progress through to the end of Year 10 (age 16).

In levels where standards do not apply, students still learn knowledge and skills from these areas, although they may not necessarily be formally assessed. For example, while standards in Science are introduced in Level 3 (Years 3 and 4), aspects of Science knowledge and skills will generally still be taught in Years Prep, 1 and 2.

Individual schools are not required to offer exactly the same programmes and not all learning areas will appear as separate subjects on a school's timetable. **The VELS provide a guide for schools to design tailor-made programmes that consider their students' backgrounds and needs. However, schools must teach, assess and report on every domain that has standards for the relevant VELS level.**

Further information is available on the website of the Victorian Curriculum and Assessment Authority (VCAA): <http://www.vcaa.vic.edu.au/>.

The Department of Education and Early Childhood Education (DEECE) in Victoria provides schools with guidance on the implementation of the VELS. The Curriculum Planning Guidelines provide a curriculum planning model that supports a whole school approach to

curriculum planning. It identifies five phases through a continuous cycle of analysis, planning, implementation, monitoring and evaluation. These phases can each be applied at the whole school level, programme and student groupings level and the individual student level. It is available online:

<http://www.education.vic.gov.au/studentlearning/curriculum/default.htm>

2.2 Curriculum review

Prior to the introduction of VELs in 2006, the Victorian school curriculum was based on the Curriculum and Standards Framework (CSF). First published in 1995, updates to the CSF were released during 2000 and 2001 and, in November 2003, the Minister for Education and Training released the *Blueprint for Government Schools*:

(http://vels.vcaa.vic.edu.au/downloads/blueprint_complete.pdf). This outlined several initiatives for continuing improvement and progress in the quality of Victoria's government school (publicly funded) system, including the development of a new curriculum for all Victorian schools in both government and non-government sectors. This new curriculum was to contain standards of achievement at significant points within the stages of learning that clearly specify what students should know and be able to do, and led to the development of the Essential Learning Standards.

The VELs are not currently under review because of the development of the Australian Curriculum.

There is no formal curriculum review cycle in Victoria. However, in 2009, there was a review and evaluation of the successes and issues schools had faced since the implementation of the VELs in 2006.

Further information on the development of the VELs is available on the VCAA website:

<http://vels.vcaa.vic.edu.au/background/>.

2.3 Lower secondary qualifications

The Education and Training Reform Act 2006 updated and replaced 12 separate education and training acts. It raised the schooling leaving age to 16 from 15. The aim was to ensure that school leavers have at least the minimum education needed to gain employment or undertake further study. All pupils between the ages of six and 16 years now have to be enrolled at a school or other registered education and training provider.

In addition, for those under 20 years of age who have not completed Year 12 (the final year of upper secondary education) or an equivalent training qualification, the Government will guarantee a place at a Technical and Further Education (TAFE) Institute or participating adult education centre.

There are no qualifications at the end of Year 10, age 16.

Two main qualifications are available to students during the two years of senior secondary education.

- The Victorian Certificate of Education (*VCE*) is an upper secondary certificate - available in a wide range of individual subjects or subject combinations - and the course is usually completed over a minimum of two years (students aged 16-18). There are 43 study areas or subjects, with options available within several of the subjects. Results from the Victorian Certificate of Education (*VCE*) determine the tertiary entrance score (*TE* score). This tertiary entrance ranking is the major determinant of whether or not a student is accepted on the university course of his or her choosing. Employers also place great value on the overall results of the *VCE*. This is exceptionally important for an individual student's future.
- The Victorian Certificate of Applied Learning (*VCAL*) launched in 2003. The *VCAL* includes the compulsory study of English and mathematics, work-related competencies, and an industry-based component. It was developed to offer flexibility to students who find that the *VCE* does not meet their needs. It is not used to calculate the *TE* score but prepares students for entry to *TAFE* (technical and further education) certificate courses, apprenticeships and traineeships, and other further education and training.

2.4 Curriculum subjects

As detailed above, the Victorian Essential Learning Standards are organised into three inter-related areas called 'strands'. Each strand (Physical, Personal and Social Learning; Discipline-based Learning; Interdisciplinary Learning) has domains which are a distinct body of knowledge, skills and behaviours. The strands, their constituent domains, and the VELS levels for student achievement by school year/age group are described in Tables 1-4 below. Until the end of compulsory education most students have few elective subjects.

Table 1 VELS Strands, Domains and Dimensions

Strand	Domain	Dimension
Physical, Personal and Social Learning	Health and Physical Education	Movement and physical activity Health knowledge and promotion
	Interpersonal Development	Building social relationships Working in teams
	Personal Learning	The individual learner Managing personal learning
	Civics and Citizenship	Civic knowledge and understanding Community engagement
Discipline-based Learning	The Arts	Creating and making Exploring and responding
	English	Reading Writing Speaking and listening
	The Humanities	Humanities knowledge and understanding Humanities skills
	The Humanities – Economics	Economic knowledge and understanding Economic reasoning and interpretation
	The Humanities – Geography	Geographic knowledge and understanding Geographical skills
	The Humanities – History	Historical knowledge and understanding Historical reasoning and interpretation
	Languages Other Than English	Communicating in a language other than English Intercultural knowledge and language awareness
	Mathematics	Number Space Measurement, chance and data Structure Working mathematically

	Science	Science knowledge and understanding Science at work
Interdisciplinary Learning	Communication	Listening, viewing and responding Presenting
	Design, Creativity and Technology	Investigating and designing Producing Analysing and evaluating
	Information and Communications Technology	ICT for visual thinking ICT for creating ICT for communicating
	Thinking Processes	Reasoning, processing and inquiry Creativity Reflection, evaluation and metacognition

Table 2 VELs Levels for Physical, Personal and Social Learning by school level/age

School Level	Age	VELs Level	Health and Physical Education	Interpersonal Development	Personal Learning	Civics and Citizenship
Prep	5-6	1	*	*		
Yr 1 & 2	6-8	2	*	*		
Yr 3 & 4	8-10	3	*	*	*	*
Yr 5 & 6	10-12	4	*	*	*	*
Yr 7 & 8	12-14	5	*	*	*	*
Yr 9 & 10	14-16	6	*	*	*	*

Table 3 VELS Levels for Discipline-based Learning by school level/age

School Level	Age	VELS level	The Arts	English	The Humanities			LOTE ³	Maths	Science
						Economics	Geography			
Prep	5-6	1	*	*					*	
Yr 1 & 2	6-8	2	*	*					*	
Yr 3 & 4	8-10	3	*	*	*				*	*
Yr 5 & 6	10-12	4	*	*		*	*	*	*	*
Yr 7 & 8	12-14	5	*	*		*	*	*	*	*
Yr 9 & 10	14-16	6	*	*		*	*	*	*	*

Table 4 VELS Levels for Interdisciplinary Learning by school level/age

School Level	Age	VELS Level	Communication	Design, Creativity and Technology	Information and Communication Technology	Thinking Processes
Prep	5-6	1				
Yr 1 & 2	6-8	2			*	
Yr 3 & 4	8-10	3		*	*	*
Yr 5 & 6	10-12	4	*	*	*	*
Yr 7 & 8	12-14	5	*	*	*	*
Yr 9 & 10	14-16	6	*	*	*	*

Time allocation

The only learning area that has a mandated number of hours is physical education. In Years Prep–3 (ages five to nine) children must have 20-30 minutes a day of physical education. In Years 4–6 (ages nine to 12) this rises to three hours each week of physical education and sport, with a minimum provision of 50 per cent for physical education. In Years 7–10 (aged 12 to 16) the mandated time is 100 minutes per week for physical education and 100 minutes per week for sport.

In addition, during the first five years of primary education (ages five/six to nine/10), schools are guided that good education practice indicates a two-hour daily literacy block and a one-hour daily numeracy block.

³ LOTE – Languages other than English

2.5 Implementation of the new Australian curriculum in Victoria

The Victorian Council for Curriculum and Assessment (VCAA) is currently planning for two phases of implementation of the new national curriculum (see also Section 1 for Australia). The first phase will be the implementation of English, mathematics, science and history within the current VELS structure, which will be known as AusVELS. Stage two will be a fully revised VELS structure to reflect the full Australian Curriculum.

Table 5 Timetable for Phase 1 implementation of English, mathematics, history and science

2011	Introductory professional development 'opt-in' trialling and validation.
2012	Professional development School-based planning and trialling
2013	Implementation of English, maths, history and science Foundation ⁴ to Year 10

Victorian Government and Catholic schools will continue to use the Physical, Personal and Social Learning and Interdisciplinary Learning Strands of the VELS until the general capabilities of the Australian Curriculum are fully developed including a continuum of assessment standards.

AusVELS will provide:

- A single curriculum framework that enables all schools and teachers to develop personalised learning pathways for all students and to continue to use a variety of school structures and learning programmes including multi-age classrooms, integrated curriculum programmes and out-of-school programmes;
- Continuity with the Victorian Early Years Learning and Development Framework (VEYLDF)⁵;
- A framework within which the subjects to be developed in Phases 2 and 3 of the Australian Curriculum (geography, languages, the arts, health and physical education,

⁴ The Australian Curriculum uses the term Foundation to describe the first year of compulsory education (children age five to six), called the Preparatory year in Victoria.

⁵ The Victorian Early Years Learning and Development Framework aims to advance all children's learning and development (0-8 years) by supporting all early childhood professionals to work together with families to achieve common outcomes for all children. It identifies: five Early Years Development Outcomes for all children; eight practice principles for learning and development; and emphasises the importance of supporting children's and families' transitions as they move within and across services throughout the early childhood period.

ICT and design and technology, business and economics, and civics and citizenship) will be incorporated as they are developed over the next three years;

- Links to all the curriculum resources that will be developed to support the Australian National Curriculum, including resources that will support the implementation of the three cross-curriculum priorities identified as part of the Australian Curriculum (Aboriginal and Torres Strait Islander histories and cultures, Asia and Australia's engagement with Asia, and Sustainability);
- AusVELS will be the authorised location of the curriculum for Victorian government and Catholic schools and is intended to provide a model for independent schools of how the new Australian Curriculum subjects can be incorporated into existing school-based curriculum programmes.

3. Canada

There is no national curriculum in Canada. The country consists of ten provinces and three territories, each of which has exclusive authority for education in the individual province or territory, controlling all aspects of the education system. The Ministers of Education from each province (or territory) have, however, established a National Secretariat - the Council of Ministers of Education, Canada (CMEC) - to ensure communication on issues such as funding, curricula and student assessment.

In addition, under the Western Canadian Protocol (WNCP), the four Western Canadian provinces of Alberta, British Columbia, Manitoba and Saskatchewan, and the three northern territories of Nunavut, Western Arctic and Yukon Territory, have established parallel curricula in key subject areas. This is with the aim of providing continuity of educational provision across the age range and across the territories.

Alberta leads on the WNCP for mathematics, which includes a Common Curriculum Framework for both Kindergarten to Grade 9 (ages five to 15) and Grades 10–12 (ages 15 to 18). Other Common Curriculum Frameworks include:

- Aboriginal Languages and Culture Programmes – Kindergarten to Grade 12
- English Language Arts - Kindergarten to Grade 12
- Languages and Bilingual Programming in International Languages - Kindergarten to Grade 12
- Social Studies - learner outcomes for Kindergarten to Grade 9.

For further information on the WNCP frameworks see:

<http://www.wncp.ca/english/subjectarea.aspx> .

Throughout Canada as a whole, the primary curriculum generally includes as compulsory subjects: language, mathematics, social studies, introductory arts, and general science. At secondary level, a greater variety of programmes is offered, with the number of compulsory subjects being reduced in the latter years of secondary (senior high school) education.

4. Canada - Alberta

4.1 Curriculum structure and organisation

Alberta's Grade 1 to Grade 12 curriculum (for students aged six to 18) is outlined in legal documents known as provincial programmes of study, which identify what students are expected to learn and do in all subjects and grades (year groups). The curriculum is designed to help students achieve their individual potential and create a positive future for themselves, their families and their communities. All the current programmes of study are available at: <http://education.alberta.ca/teachers/program.aspx>.

There is also a Kindergarten Programme Statement for five-to six-year-olds: <http://education.alberta.ca/media/312892/kindergarten.pdf> which provides learner expectations in seven learning areas: early literacy; early numeracy; citizenship and identity; environment and community awareness; personal and social responsibility; physical skills and well-being; and creative expression (see table 6 for further information on these subjects).

In addition, Curriculum Handbooks for Parents, Curriculum Summaries and the Curriculum Express series contain information for parents on the subjects, programmes and courses available in Alberta schools. They are updated every year as changes are made to the curriculum: <http://www.education.alberta.ca/parents/resources.aspx>.

The following grade and school levels are most common in the province (some school boards have a middle school structure for Grades 5 to 8):

- Kindergarten applies to children aged five- six years;
- Elementary school applies to children in Years 1 to 6 (ages six to 12);
- Junior high school applies to children in Years 7 to 9 (ages 12 to 15);
- Senior high school applies to children in Years 10 to 12 (ages 15 to 18).

Alberta's Grade 1 to Grade 12 curriculum is statutory and outlined in programmes of study.

4.2 Curriculum review

Review of the curriculum is ongoing in Alberta. Individual programmes of study are regularly reviewed to ensure their currency and appropriateness.

Plans for curriculum revisions and related activities are reflected in an 'implementation schedule for programmes of study and related activities'. The schedule for 2010-2011 is available at: <http://education.alberta.ca/media/449087/impshed.pdf>.

In addition to the regular reviews mentioned above, a new project began in January 2011 which aims to ensure that Alberta's curriculum remains responsive and relevant for students. Its goals are to develop:

- revised standards and guidelines for the future curriculum (programmes of study, assessment tools and learning and teaching resources); and
- a cohesive and collaborative process for curriculum development that will ensure that curriculum is responsive to students in a rapidly changing world.

The aim is for draft standards, guidelines and processes to be in place for piloting by March 2012, with implementation beginning in September 2013.

As mentioned above, curriculum review in Alberta is an ongoing process, with the programmes of study being reviewed/updated each year. Alberta Education aims to plan curriculum changes well in advance to minimise any impact on schools, teachers and students. Changes are often minor and do not require new teaching practices or resources. However, if it becomes clear through the review process that there is a need for major change, Alberta Education ensures that school authorities have advance notice so they can prepare for the changes and purchase any required resources.

Further information about the development and implementation of Alberta's curriculum can be found at: http://www.education.alberta.ca/media/824183/curric_dev.pdf .

4.3 Lower secondary qualifications

Lower secondary education is provided in junior high schools for students in Years 7 to 9 (ages 12 to 15).

Students do not obtain a formal leaving qualification at the end of lower secondary phase education, age 15. However, provincial achievement tests are administered annually on completion of lower secondary education in Year 9 (age 15). The subjects tested are mathematics, science, social studies, English and French.

The results of continuous classroom assessment or of the province-wide tests do not normally influence a student's possibilities of promotion to the next class. However, the results of the Grade/Year 9 province-wide tests, taken on completion of junior high school, aged 15, are often used, in combination with advice from guidance counsellors, to determine the type of senior high school most suited to a student's needs. The results of these tests are generally regarded as being good predictors of high school performance.

The provincial student achievement testing programme in Alberta is intended to provide the provincial Ministry of Education, school jurisdictions, schools and the public with information significant at the provincial and local levels concerning student knowledge, understanding and skills in relation to programme objectives. The assessment is, however, not intended to provide information for use in student placement, nor as a basis for teacher evaluation.

Students who have successfully completed Grade 9 (age 15) at an Alberta junior high school are eligible to attend a senior high school.

Students may obtain one of the following qualifications at the end of upper secondary education, which is provided in senior high schools for students in Years 10 to 12 (ages 15 to 18):

- Alberta High School Diploma (English and Francophone);
- Certificate of High School Achievement (English and Francophone) (for certain students enrolled in knowledge and employability courses);
- Certificate of Achievement (for students enrolled on a specific integrated occupational programme);
- Certificate of School Completion (for students with significant cognitive delays).

The majority of students receive the High School Diploma.

A student in Alberta needs an Alberta High School Diploma to graduate from high school. Results in the final diploma examination, taken on completion of Grade/Year 12 (age 18), influence progression to the various institutions of post-secondary education which exist in the province.

Further information is available in the Guide to Education: ECS to Grade 12 2010 'Diploma and Certificate Requirements' pages 79 to 90:

<http://education.alberta.ca/admin/resources/guidetoed.aspx>.

4.4 Curriculum subjects

In addition to the information provided in the following tables covering curriculum subjects in Alberta, further information on Alberta be found in these publications:

- *Our Students, Our Future* (2007) in the section 'A Solid Foundation':
- <http://www.education.alberta.ca/parents/educationsys/ourstudents/vi.aspx>
- *Guide to Education: ECS to Grade 12* (2010):
<http://education.alberta.ca/admin/resources/guidetoed.aspx>

Table 6 Compulsory and optional subjects in the Alberta school curriculum for Kindergarten and Elementary school

Compulsory subjects and time allocations	Optional subjects
<p>Kindergarten (five-to six-year-olds)</p> <p>The Kindergarten Programme Statement provides learner expectations in seven learning areas:</p> <ul style="list-style-type: none"> • early literacy; • early numeracy; • citizenship and identity; • environment and community awareness; • personal and social responsibility; • physical skills and well-being; • creative expression. <p>Learner expectations in the early literacy, early numeracy, and citizenship and identity learning areas are the outcomes for Kindergarten in English language arts, mathematics and social studies in the <i>Program of Studies: Elementary Schools</i>. Learner expectations in the other four learning areas are integrated and focus on early learning in science, physical education, health and fine arts.</p> <p>The expectations of the seven learning areas are interrelated and aim to meet the social, physical, intellectual, cultural, creative and emotional needs of young children. These learning areas describe the learning that young children achieve, not only in the Kindergarten programme, but also in their homes and communities. The learning areas also provide a transition to the subject area expectations of elementary schooling (age six onwards).</p> <p>Time allocation</p> <p>At this level, the minimum number of instructional hours per year is 475. Instructional time includes time scheduled for the purposes of instruction and other activities for children where direct child–teacher interaction and supervision are maintained. Providers are free to decide how to allocate these hours.</p>	<p>Not applicable at this level</p>

Elementary school (Grades 1 to 6, ages six to 12)

The following subjects are compulsory at elementary school level in Alberta:

- language arts (English and French);
- mathematics;
- science;
- social studies;
- art and music;
- health and life skills and physical education.

Time allocation

At this level, the number of instructional hours per year is 950.

In addition, all children in Years 1 to 9, ages six to 15, are expected to participate in Daily Physical Activity (DPA). School authorities monitor the implementation of this DPA to ensure that all students are active for a minimum of 30 minutes daily.

Fifteen percent of instructional time is set aside for optional subjects, such as second languages, drama and religious instruction. Information and communication technology learner outcomes are infused within core curricula in language arts, mathematics, science and social studies at all grade levels. Optional/elective courses vary from school to school, according to local needs and priorities, and parental input.

Tables 7 and 8 show the recommended time allocation for subjects in Grades 1 and 2 (ages six to eight), and Grades 3 to 6 (ages eight to 12). They are taken from *Guide to Education: ECS to Grade 12* (2010) page 33:

<http://education.alberta.ca/admin/resources/guidetoed.aspx>

Table 7 Recommended time allocation for subjects in Grades 1 and 2

Percentage of Time Allocations Recommended

Grade 1 and Grade 2

Subject Areas	English Language Programming Percentage	Francophone/ French Immersion Programming Percentage
English Language Arts	30%	30%
French Language Arts ^① /Français ^②	0%	
Mathematics	15%	15%
Science	10%	10%
Social Studies	10%	10%
Art and Music	10%	10%
Health and Life Skills and Physical Education	10%	10%
Time for other subjects; e.g., second languages, ^③ drama, religious instruction.	15%	15%

① French language arts is taught in alternative French language programs (including French immersion).

② Français is taught in Francophone schools.

③ The recommended time is 10% for schools that implement provincial programs of study for French as a second language, Aboriginal language and culture programs or international language and culture programs.

Note: Information and Communication Technology (ICT) learning outcomes are infused within core curricula in language arts, mathematics, science and social studies at all grade levels.

Table 8 Recommended time allocation for subjects in Grades 3-6

Grade 3 through Grade 6

Subject Areas	English Language Programming Percentage	Francophone/ French Immersion Programming Percentage
English Language Arts	25%	{ 35% }
French Language Arts ^❶ /Français ^❷	0%	
Mathematics	15%	15%
Science	15%	10%
Social Studies	10%	10%
Art and Music	10%	10%
Health and Life Skills and Physical Education	10%	10%
Time for other subjects; e.g., second languages, ^❸ drama, religious instruction.	15%	10%

❶ French language arts is taught in alternative French language programs (including French immersion).

❷ Français is taught in Francophone schools.

❸ The recommended time is 10% for schools that implement provincial programs of study for French as a second language, Aboriginal language and culture programs or international language and culture programs.

Note: Information and Communication Technology (ICT) learner outcomes are infused within core curricula in language arts, mathematics, science and social studies at all grade levels.

Table 9 Compulsory and optional subjects in the Alberta school curriculum for Junior and Senior High School

Compulsory subjects and time allocations	Optional subjects
<p>Junior high school (Grades 7 to 9, ages 12 to 15)</p> <p>The following subjects are compulsory at junior high school:</p> <ul style="list-style-type: none"> • language arts; • mathematics; • science; • social studies; • physical education; • health and personal life skills. <p>Information and communication technology learner outcomes are infused within core curricula in language arts, mathematics, science and social studies at all grade levels.</p> <p>Time allocation</p> <p>At this level, the number of instructional hours per year is 950.</p> <p>Recommended time allocation for subject areas in the junior high school programme can be found in <i>Guide to Education: ECS to Grade 12</i> (2010) page 34: http://education.alberta.ca/admin/resources/guidetoed.aspx</p> <p>Daily physical activity (DPA) (Years 1 to 9, ages six to 15)</p> <p>School authorities monitor the implementation of DPA to ensure that all students are active for a minimum of 30 minutes daily.</p>	<p>Schools must offer two provincially authorised optional courses (except where instruction in a language other than English is offered, when only one provincially authorised optional course is required). Students are encouraged to continue in Grade 8 and Grade 9 with at least one of the optional courses selected in Grade 7. Provincially authorised optional courses include: career and technology studies; environmental and outdoor education; ethics; indigenous languages (such as Blackfoot language and culture and Cree language and culture); French as a second language; fine arts (art, drama, music); international languages; religious studies; or locally developed courses.</p> <p>Patriotic & Religious Instruction and Exercises</p> <p>Some school boards may require their schools to schedule religious and/or patriotic instruction and exercises. Parents may request that their child be exempt from these.</p>

Senior high school (Years 10 to 12, ages 15 to 18)

The choice of upper secondary qualification determines what is taught at this stage. Schools must, however, ensure that students have access to a minimum of 1000 instructional hours per year. School authorities develop methods of school organisation and instructional delivery that best meet the needs and interests of individual students.

Table 10 shows the high school diploma requirements. (Note: hyperlinks in the footnotes below this table are disabled.)

Table 10 Alberta High School Diploma requirements

ALBERTA HIGH SCHOOL DIPLOMA: GRADUATION REQUIREMENTS (ENGLISH)
The requirements indicated in this chart are the <u>minimum</u> requirements for a student to attain an Alberta High School Diploma. The requirements for entry into post-secondary institutions and workplaces may require additional and/or specific courses.
100 CREDITS including the following:
ENGLISH LANGUAGE ARTS – 30 LEVEL (English Language Arts 30-1 or 30-2)
SOCIAL STUDIES – 30 LEVEL (Social Studies 30-1 or 30-2)
MATHEMATICS – 20 LEVEL (Pure Mathematics 20, Applied Mathematics 20 or Mathematics 24) (Mathematics 20-1, Mathematics 20-2 or Mathematics 20-3)
SCIENCE – 20 LEVEL ¹ (Science 20 ² , Science 24, Biology 20, Chemistry 20 or Physics 20)
PHYSICAL EDUCATION 10 (3 CREDITS) ³
CAREER AND LIFE MANAGEMENT (3 CREDITS) ⁴
10 CREDITS IN ANY COMBINATION FROM:
<ul style="list-style-type: none"> • Career and Technology Studies (CTS) • Fine Arts • Second Languages ⁵ • Physical Education 20 and/or 30 ⁶ • Locally developed/acquired and locally authorized courses in CTS, fine arts, second languages, Knowledge and Employability occupational courses or IOP occupational courses • Knowledge and Employability courses • Registered Apprenticeship Program courses
10 CREDITS IN ANY 30-LEVEL COURSE (<u>IN ADDITION TO A 30-LEVEL ENGLISH LANGUAGE ARTS AND A 30-LEVEL SOCIAL STUDIES COURSE AS SPECIFIED ABOVE</u>) ⁷
<p>These courses may include:</p> <ul style="list-style-type: none"> • 30-level locally developed/acquired and locally authorized courses • Advanced level (3000 series) in Career and Technology Studies courses • 30-level Work Experience courses ⁸ • 30-level Knowledge and Employability courses • 30-level Registered Apprenticeship Program courses • 30-level Green Certificate Specialization courses • Special Projects 30

- ❶ The science requirement—Science 20 or 24, Biology 20, Chemistry 20 or Physics 20—may also be met with the 10-credit combination of Science 14 and Science 10.
- ❷ Science 20 is not available in Francophone schools.
- ❸ See information on [exemption from the physical education requirement](#).
- ❹ See information on [exemption from the CALM requirement](#).
- ❺ Students may earn any number of credits in the study of second languages, but only a maximum of 25 language credits may be used to meet the 100-credit requirement for the Alberta High School Diploma.
- ❻ Students entering Grade 10 in the 1998–1999 school year and subsequent school years will be able to use Physical Education 20 and/or 30 to meet this 10-credit requirement.
- ❼ 30-level English language arts or 30-level social studies courses from a different course sequence may not be used to meet the 30-level course requirement.
- ❽ Students may earn any number of credits in Work Experience, but only 15 credits may be used to meet the 100-credit requirement for the Alberta High School Diploma.

FURTHER NOTES:

- For 30-level courses that have a diploma examination, the final course mark consists of a blend of the school-awarded mark and the diploma examination mark.
- For more information, students in Francophone programs should consult the Alberta High School Diploma Requirements for French First Language–Francophone.
- Mature students should consult the [Mature Students](#) section for applicable requirements.

5. Canada - Ontario

5.1 Curriculum structure and organisation

In Ontario, the Ministry of Education sets the curriculum for Ontario's schools, which is known as **the Ontario Curriculum**. Ontario Curriculum documents define what students are taught in Ontario public schools. They detail the knowledge and skills that students are expected to develop in each subject, at each grade level, expressed as 'overall' and 'specific' curriculum expectations. By developing and publishing curriculum documents for use by all Ontario teachers, the Ministry of Education sets standards for the entire province.

However, teaching and assessment strategies are left to the professional judgement of teachers, enabling them to address individual student needs and deliver the curriculum in a context that is locally meaningful.

The provincial elementary phase curriculum for children from Grade 1 (aged six) to Grade 8 (aged 14) is available at: <http://www.edu.gov.on.ca/eng/curriculum/elementary/index.html>.

The Secondary (high school) Curriculum for Grades 9 - 12 (ages 14 to 18) contains 'Curriculum Guidelines' and 'Course Profiles'. These provide clear definitions of the skills, knowledge and attitudes that students are expected to develop in particular subjects. In these documents, the subject content is stated clearly enough to assure depth and consistency, while still giving teachers the opportunity to use resources and methods that suit the students they teach. The Secondary Curriculum is available at: <http://www.edu.gov.on.ca/eng/curriculum/secondary/index.html>.

In addition, as a new full-day Kindergarten year for four- and five-year-olds began to be introduced in Ontario in September 2010, a new full-day pre-school (Kindergarten) curriculum for four- and five-year-olds has been launched; this is being piloted during the 2010/11 school year and is intended to replace the current curriculum when full-day pre-school learning is fully implemented in 2015.

The curriculum is statutory in Ontario. The Ministry of Education administers the system of publicly-funded elementary and secondary school education, in accordance with and under the authority of the Education Act. The Minister of Education, through the Ministry, issues curricula, sets diploma requirements and sets policy for student assessment, evaluation and reporting.

5.2 Curriculum review

The Ontario Curriculum in its current form was introduced in 2000; in 2003, the Ministry of Education began a curriculum review process in which the curriculum policy document for every subject is reviewed and revised in accordance with a seven-year cycle. This process is intended to ensure that the curriculum remains current, relevant and age-appropriate. The current review cycle will be completed in 2012.

The Curriculum Council is a group of community leaders and education experts who were first brought together in March 2007 to advise the Minister of Education. They provide strategic policy advice on the elementary and secondary school curriculum.

The first topic reviewed by the Curriculum Council in 2007 was environmental education. Standards of environmental education were developed and are being applied to all current and future curricula to come under review. The aim is to ensure the quality of environmental education across the curriculum and its relevance to Ontario students.

The Curriculum Council has most recently reviewed the topic of financial literacy. A Working Group on Financial Literacy was formed to provide a report to the Curriculum Council in 2010. Based on this report, and other information, the Council provided advice to the Minister about financial literacy in the existing Grades 4 to 12 curriculum. As a result, the Government is aiming to better integrate financial literacy into the Ontario curriculum from autumn 2011.

Pre-school curriculum: Full-day curriculum for four- and five-year-olds (see also section 5.1 above)

The new full-day pre-school curriculum for four- and five-year-olds, which is being piloted during the 2010/11 school year, is a play-based programme. It introduces the basics of language, maths, science, arts, physical activity and personal development. One of its main goals is to help children make a smooth transition to the first year of compulsory education. More details are available at:

<http://www.edu.gov.on.ca/eng/curriculum/elementary/kindergarten.html>.

Ongoing reviews since 2003

Some of the changes introduced as a result of cyclical, subject area curriculum reviews have included:

- a reduction in the amount of content in each subject;
- the addition of examples and other features to assist teachers in lesson preparation and planning;

- the provision of additional information to assist teachers in supporting English language learners, planning programmes for students with special educational needs, using technology, and other important aspects of programme planning and classroom instruction;
- the embedding of expectations that allow students to develop literacy, numeracy, and critical thinking skills in all subjects; and
- alignment of curriculum expectations with policy initiatives, such as those in the areas of environmental education, Aboriginal education, equity and inclusive education, and French-language education.

Elementary phase curriculum review

In spring 2009, the Working Group on the Elementary Curriculum was established to examine the elementary curriculum and consult with the public to gather information and provide recommendations on how to improve it. This working group has held regular meetings, reviewed research from other jurisdictions and developed a preliminary public survey. A discussion paper, *Supporting Learning and Teaching in Ontario's Elementary Schools* (<http://www.edu.gov.on.ca/eng/paperconsult/index.html>) was developed, based on the discussions and responses to the preliminary survey.

The review aims to reduce what is regarded as an overcrowded curriculum and consequently enable students to have more time to practise what they have learned and gain a deeper understanding. Proposed changes include 'leaner' guidelines, fewer 'checklists' of facts to learn, and more time for 'deeper' learning. In essence, the curriculum is being 'thinned out'. The working group's final report to the Curriculum Council was expected in late 2010, although there does not yet appear to be any information about this report on the Ministry of Education website.

5.3 Lower secondary qualifications

In Ontario, elementary (primary) level education includes Grades 1-8 (students aged six to 14 years) and secondary high school education caters for students in Grades 9-12, aged 14-18 years.

Education in Ontario was previously compulsory between the ages of six and 16. Legislation passed in December 2006, which came into force on 1 July 2008, extended the length of time a student must attend school to the age of 18, or the completion of upper secondary high school.

There is no formal lower secondary qualification in Ontario. Students graduate on completion of high school at around age 18. However, the provincial literacy test for students in Grade 10 (aged 16) (introduced in the 2000/01 academic year) is a high school diploma requirement. It was introduced to assure students, parents, post-secondary

institutions and employers that graduates of Ontario's high schools have the literacy skills they need. The testing takes place in Grade 10, age 16, although graduation in Ontario usually takes place on successful completion of Grade 12, age 18; the aim is to ensure that there is sufficient time for remedial help if necessary.

The literacy test sits alongside other statutory assessment tests. Since the 2000-01 academic year, all students in Year 9 (aged 14-15) have been required to take standardised provincial tests in numeracy. Since the 2004-05 school year, additional province-wide standardised tests (in science, history, English and mathematics) have been compulsory for students in high school education in Ontario. The additional, province-wide standardised tests are part of a commitment to develop and introduce additional student tests in core subjects, tied to the curriculum, to give parents and teachers easily understood information about students' progress and potential for improvement.

The standardised tests are administered by the Education Quality and Accountability Office (EQAO). This is an arms-length government agency, established in 1995 to develop and implement assessment programmes in schools across Ontario.

To graduate from high school – with the high school diploma - students need to:

- obtain a total of thirty credits in high school (one for every course successfully completed);
- successfully complete the compulsory Grade 10 literacy test (students aged 15/16); and
- complete 40 hours of community involvement.

A high school diploma is one of the requirements for entry into further study or the work force.

5.4 Curriculum subjects

Table 11 Compulsory and optional subjects in the Ontario school curriculum for Kindergarten, Elementary and High Schools

Compulsory subjects and time allocations	Optional subjects
<p>The Kindergarten Programme, (four- to six-year-olds) 2006</p> <p>The current Kindergarten Programme provides learner expectations in six learning areas:</p> <ul style="list-style-type: none"> • Personal and social development including skills that are foundational for lifelong learning, well-being, and social development (such as self-reliance and social skills); • Language including skills that are foundational for literacy development (that is, oral communication, reading, writing, and media literacy skills); • Mathematics including skills that are foundational for numeracy development (such as skills in the areas of number sense, geometric relationships, measurement relationships, and pattern); • Science and technology including skills that are foundational for scientific and technological learning (such as inquiry, design, observation, and exploration skills); • Health and physical activity including skills that are foundational for physical development (for example, skills for large-muscle and small-muscle development) and for healthy living; and • The arts including skills that are foundational for learning in the arts (that is, skills in visual arts, music, drama, and dance). <p>In order to address the full range of each child’s developmental needs, the Kindergarten programme aims to provide opportunities for learning, self-expression, and self-discovery in a variety of areas – for example, in music, drama, games, language activities, and cooperative activities with peers. It acknowledges that each child is unique and has individual needs and that some children will benefit more from one type of teaching strategy than another; some may need more time than others, and/or additional resources, to achieve the learning expectations.</p> <p>The Full-Day Early Learning Kindergarten Programme (draft)</p> <p>A new full-day curriculum for four- and five-year-olds has been launched and is being piloted during 2010/11. This is intended to</p>	<p>N/A</p>

replace the current curriculum when full-day learning is fully implemented in 2015. The Full-Day Early Learning Kindergarten Programme is designed to help children build on their prior knowledge and experiences, form concepts, acquire foundational skills, and form positive attitudes to learning as they begin to develop their goals for lifelong learning. It is also designed as the foundation for a continuum of learning from the early years to Grade 8 (age 14). The learning areas are the same as the current Kindergarten programme, but are also based on five developmental domains:

Areas of Learning	Developmental Domains	Big Ideas
Personal and Social Development	Social, Emotional	Children are connected to others and contribute to their world. Children have a strong sense of identity and well-being.
Language	Communication/Language, Cognitive, Emotional	Children are effective communicators.
Mathematics	Communication (mathematical literacy), Cognitive	Young children have a conceptual understanding of mathematics and of mathematical thinking and reasoning.
Science and Technology	Cognitive	Children are curious and connect prior knowledge to new contexts in order to understand the world around them.
Health and Physical Activity	Physical	Children make healthy choices and develop physical skills.
The Arts	Communication/Language, Cognitive, Emotional, Physical	Young children have an innate openness to artistic activities.

Elementary school, Grades 1 to 8 (ages six to 14)

The elementary school curriculum for children in Grade 1 to Grade 8 (ages six to 14) is divided into:

- The arts, comprising four strands: music, visual arts, dance and drama (Grades 1 – 8, ages six to 14).
- French as a second language (Grades 4 – 8, ages 10-14) (or French immersion, Grades 1 – 8, ages 6-14).
- Language, comprising four interdependent strands – oral communication, reading, writing, and media literacy (Grades 1 – 8, ages six to 14).
- Mathematics (Grades 1 – 8, ages six to 14), comprising five strands – number sense and numeration; measurement; geometry and spatial sense; patterning and algebra; and data management and probability.
- Science and technology (Grades 1 – 8, ages six to 14), comprising four strands: understanding life systems; understanding structures and mechanisms; understanding matter and energy; and understanding earth and space systems.
- Social studies (Grades 1 – 6, ages six to 12) (includes aspects of Canadian and world history, geography, civics and economics education).
- History and geography (Grades 7 – 8, ages 12-14).
- Health and physical education (Grades 1 – 8, ages six to 14), organised into three inter-related strands – active living, movement competence, and healthy living.

The Ontario Government will introduce financial literacy to the curriculum for students in Years 4 to 12 (ages nine to 18) from September 2011. The decision has been taken in response to the global economic crisis, which has highlighted the need for a financially literate population.

No optional/elective subjects

High school, Grades 9 to 12, ages 14-18

The high school programme is based on a credit system, where, to graduate with a high school diploma at age 18, students must earn a total of 30 credits (one for every 110-hour course successfully completed). 18 of these 30 credits are compulsory and 12 are optional. The compulsory credit system is as follows:

- 4 credits in English;
- 1 credit in French as a second language;
- 3 credits in mathematics (1 credit in Grade 11 or 12);
- 2 credits in science;
- 1 credit in Canadian history;
- 1 credit in Canadian geography;
- 1 credit in the arts (music, art, drama or dance);
- 1 credit in health and physical education;
- ½ credit in civics;
- ½ credit in career studies.

Plus:

- 1 additional credit in English, or a third language, or a social science, or Canadian and world studies;
- 1 additional credit in health and physical education, or business studies, or the arts (music, art, drama, or dance);
- 1 additional credit in science (Grade/Year 11 or 12) or technological education (Grades 9-12).

The Ontario Government will introduce financial literacy to the curriculum for students in Years 4 to 12 (ages nine to 18) from September 2011. The decision has been taken in response to the global economic crisis, which has highlighted the need for a financially literate population.

The 12 optional credits which students must complete to graduate from high school are designed to enable students to build an educational programme that suits their individual interests and meets university, college, apprenticeship, or work requirements.

High school students in Ontario also have to complete 40 hours of community work outside school time, before they are permitted to graduate.

6. Finland

6.1 Curriculum structure and organisation

There are three National Core Curricula in Finland: one for pre-primary education (children aged six to seven); one for basic compulsory education (primary and lower secondary level education) (children aged seven to 16); and one for upper secondary education (young people aged 16 to 19). The details of all three curricula are determined by the Finnish National Board of Education, and include the objectives and core content of different subjects, time allocations, principles of assessment, special needs education, pupil welfare and educational guidance.

Education providers (usually the local education authorities and the schools themselves) must draft their own curricula for each phase of education within the framework of the relevant National Core Curriculum.

The National Core Curriculum for Basic (compulsory level) Education is available at: http://www.oph.fi/english/publications/2009/national_core_curricula_for_basic_education.

The National Core Curriculum for Upper Secondary Education is available at: http://www.oph.fi/english/publications/2003/National_Core_Curriculum_for_Upper_Secondary_Schools_2003.

Pre-primary education is voluntary and intended for six-year-olds who will start their compulsory education in the following year. It is provided in day care centres falling under the administration of the Ministry of Social Affairs and Health (majority), and in comprehensive schools, providing basic compulsory education. The pre-primary curriculum is not available to download in English.

In formulating the curriculum for compulsory basic education, attention is paid to the pre-primary curriculum with a view to ensuring coherence, not only in terms of curriculum, but also in relation to all decisions made by the local authority in respect of children, young people and schooling. The basic principle in defining the local or school-based curricula is that as many people as possible who are involved in the education of children, in the school or day care setting, such as class teachers and kindergarten teachers, special needs teachers, multi-professional partners, and guardians in the home setting, should take part in the process of defining the curriculum.

Schools (or local education authorities) must draft their own curricula for each phase of education within the framework of the National Core Curriculum.

6.2 Curriculum review

The present National Core Curriculum for basic compulsory education (seven- to 16-year-olds) was confirmed in January 2004 and introduced in schools in August 2006.

The present National Core Curriculum for upper secondary education (16- to 19-year-olds) was reformed in 2003 and the local curricula based on this framework came into effect in schools in August 2005.

The National Core Curriculum for pre-primary education (six- to seven-year-olds) was established in 2000 and came into force in August 2002. It was developed through extensive collaboration between all relevant stakeholders, including local authorities and their day care centres and schools.

Reform of time allocation for different subjects

According to colleagues in the Eurydice Unit in Finland, the time allocation/distribution of lesson hours for different subjects in basic compulsory education is currently being reviewed. For this purpose, a working group was set up to address the questions of:

- how the position of arts and crafts subjects could be strengthened;
- what new subjects are needed;
- how the language choices made by the pupils could be made more versatile; and
- how the use of ICT could be strengthened?

The National Core Curricula are then planned to be reviewed on the basis of the new time allocation.

The National Core Curricula in Finland are revised approximately every ten years. However this is not legislated for.

6.3 Lower secondary qualifications

Basic compulsory education (primary and lower secondary education) is almost exclusively provided by comprehensive schools and lasts nine years (students aged seven to 16). In addition, local authorities may provide those who have completed the basic education syllabus with additional instruction with a scope of 1,100 hours. This 'Year 10' (for 16- to 17-year-olds) is voluntary and individual local authorities decide whether or not it is offered.

Pupils receive a 'basic education' certificate on completion of basic compulsory education in the comprehensive school. To receive the certificate, students must complete a final assessment, based on the objectives of basic education. This must be nationally comparable and equitable for all pupils.

Pupils who successfully complete the entire syllabus offered in the optional additional year ('Year 10', age 16 to 17, see above) receive an 'additional syllabus' certificate.

The final assessment of basic education provides the basis for which pupils are selected for further studies when they leave comprehensive school.

A student who has completed general upper secondary education (ages 16 to 19) syllabus is awarded a leaving certificate.

At the end of general upper secondary education (age 18 to 19) students usually take the matriculation examination. The examination consists of at least four tests; one of these, the test in the candidate's mother tongue, is compulsory for all. The candidate then chooses three other compulsory tests from among the following four: the test in the second national language; a foreign language test; the mathematics test; and one test in the general studies battery of tests (sciences and humanities). The candidate may include, in addition, as part of his or her examination, one or more optional tests.

The certificate of matriculation is awarded to a student who has passed the compulsory tests in the matriculation examination and who is awarded the leaving certificate.

6.4 Curriculum subjects

Table 12 Compulsory and optional subjects in the Finland school curriculum for pre-primary and basic education

Compulsory subjects and time allocations	Optional subjects
<p>Pre-primary curriculum, six- to seven-year-olds</p> <p>The pre-primary core curriculum does not specify different, individual subjects. It is based on integrated themes which relate to the child's experience of life and his/her view of the world.</p> <p>The key subject areas covered by these integrated themes include language and interaction, mathematics, ethics and philosophy, nature and the environment, health, physical and motor development as well as art and culture.</p>	<p>N/A</p>
<p>Basic compulsory curriculum, seven- to 16-year-olds</p> <p>The compulsory core subjects during basic compulsory phase education are:</p> <ul style="list-style-type: none"> • the mother tongue (that is, Finnish or Swedish) language and literature; • second national language; • foreign languages; • environmental studies; • health education; • religion or ethics; • history; • social studies; • mathematics; • physics; • chemistry; • biology; • geography; • physical education; • music; • visual arts; • craft; • home economics; 	<p>In Years 7 to 9 (ages 13 to 16) elective subjects are included in the curriculum. Pupils' parents or guardians decide which of the elective subjects on offer the pupil will take.</p> <p>See Box 1 below for additional information regarding optional subjects in basic education.</p>

- pupil counselling/guidance.

In Years 7 to 9 (ages 13 to 16), the curriculum also includes a period of workplace (careers) guidance.

Time allocation

The Government determines the overall curriculum time allocation by defining the minimum number of lessons for core subjects during basic compulsory level education. In Years 1 to 6 (ages seven to 13), pupils usually receive the same education, but schools may focus on different subjects in different ways due to the flexible time allocation.

The current distribution of lesson hours (as detailed in Table 13) was confirmed by the Government in December 2001. It is currently under reform.

In Table 13, the subjects (or subject groups) in basic compulsory education are grouped into sections combining several grades/year levels. For each section, the minimum number of lessons is defined in terms of the number of annual weekly lessons. There are 38 weeks in a school year, so one annual weekly lesson adds up to 38 lessons, of which at least 45 minutes per one-hour lesson is expected to be dedicated to instruction. For example, in mathematics the distribution of lesson hours means that there must be at least 38 x 32 lessons = 1216 lessons during the nine years of basic compulsory level education. These 32 lessons are divided into three sections: at least six annual weekly lessons (=228 lessons) must be taught during Years 1 to 2 (ages seven to nine), 12 (=456 lessons) during Years 3 to 5 (ages nine to 12), and 14 (= 532 lessons) during Years 6 to 9 (ages 12 to 16).

Local authorities or schools determine the precise allocation of lessons to the individual grades/year levels within a section.

Table 13 Allocation of lessons by subject and grade, as annual weekly lessons

Grades	1 – 2	3 – 5	6 - 9	Total
Mother tongue and literature	14	14	14	42
Mathematics	6	12	14	32
Grades	1 – 2	3 – 6	7 - 9	
A language 1)	-----	8	8	16
B language 2)	-----	-----	6	6
Grades	1 – 4	5 – 6	7 - 9	
Biology and geography	9*	3	7	31
Physics and chemistry		2	7	
Health education			3	
History and civics	-----	3	7	10
Grades	1 – 5	6 – 9		
Religion/Ethics	6	5		11
Grades	1 – 4		5 - 9	
Music	4 -		3 -	56
Arts	4 -	=26 30=	4 -	
Craft	4 -		7 -	
Physical education	8 -		10 -	
Grades	1 – 6	7 – 9		
Home economics	-----	3		3
Student counselling	-----	2		2
Elective subjects	-----	(13)		13
Grades	1 - 3	4 – 6	7 - 9	
Minimum number of lessons	19 19 23	23 24 24	30 30 30	222
Grades	1 - 2	3 – 6	7 - 9	
Optional A language	-----	(6)	(6)	(12)

Source: Eurydice (2010) 'Organisation of the education system in Finland 2009/2010', page 60.

Notes

1) Language begun in grades 1-6

2) Language begun in grades 7-9

* In grades 1 to 4 biology, geography, physics and chemistry as well as health education are combined in a subject known as environment and nature studies

- - - Subject is not taught in the grades unless otherwise stated in the curriculum

() taught as an elective subject

Table 14 Compulsory and optional subjects in the Finland school curriculum for upper secondary education

Compulsory subjects and time allocations	Optional subjects
<p>Upper secondary curriculum, 16- to 19-year-olds</p> <p>Syllabus</p> <p>The upper secondary school syllabus includes:</p> <ul style="list-style-type: none"> • mother tongue and literature (Finnish or Swedish); • the other national language (Swedish or Finnish); • foreign languages; • studies in mathematics and natural sciences; • studies in the humanities and social sciences; • religion or ethics; • physical and health education; • arts and practical subjects. <p>Students must also receive student counselling/guidance.</p> <p>Courses</p> <p>To ensure that all compulsory subject syllabuses are covered during the school year, there is an overall school schedule, which is based on the curriculum. As a result, studies are divided into compulsory, specialisation and applied courses. Each student must complete the compulsory courses (specialisation and applied courses are optional – see the column to the right). Table 15 outlines the distribution of lesson hours in general upper secondary education.</p> <p>Time allocation</p> <p>The average scope of one course is 38 lessons. Consequently, in order to achieve the number of lessons, the number of courses on the time allocation table (Table 15) should be multiplied by 38. The duration of a lesson must be at least 45 minutes.</p>	<p>Syllabus</p> <p>The upper secondary syllabus also includes either partially or entirely optional or elective subjects.</p> <p>Courses</p> <p>Curricula are drawn up so as to provide students with an opportunity for individual choices of studies, including instruction given by other education providers, where necessary.</p> <p>Specialisation courses are primarily follow-up courses directly connected with compulsory courses; schools must provide these courses from which students can choose their options.</p> <p>Applied courses are integrative courses, including elements from various subjects, methodological courses, or other school-specific courses. They can also be vocational.</p> <p>The provider of general upper secondary education decides on the inclusion of applied courses in the curriculum and they are elective for students.</p>

Table 15 Distribution of lesson hours in general upper secondary education

Subject or subject group	Compulsory courses	Number of national courses offered as specialisation courses
Mother tongue and literature	6	3
Languages		
A-language, starting in grades 1-6 of compulsory education	6	2
B-language, starting in grades 7-9 of compulsory education	5	2
Other languages		16
Mathematics		
basic syllabus	6	2
advanced syllabus	10	3
Environmental and natural sciences		
Biology	2	3
Geography	2	2
Physics	1	7
Chemistry	1	4
Religion or ethics	3	2
Philosophy	1	3
Psychology	1	4
History	4	2
Social studies	2	2
Arts and physical education		
Physical education	2	3
Music	1-2	3
Visual Arts	1-2	3
Health education	1	2
Educational and vocational guidance	1	1
Compulsory courses	47-51	
Minimum total of specialisation courses	10	
Applied courses		
Minimum total number of courses	75	

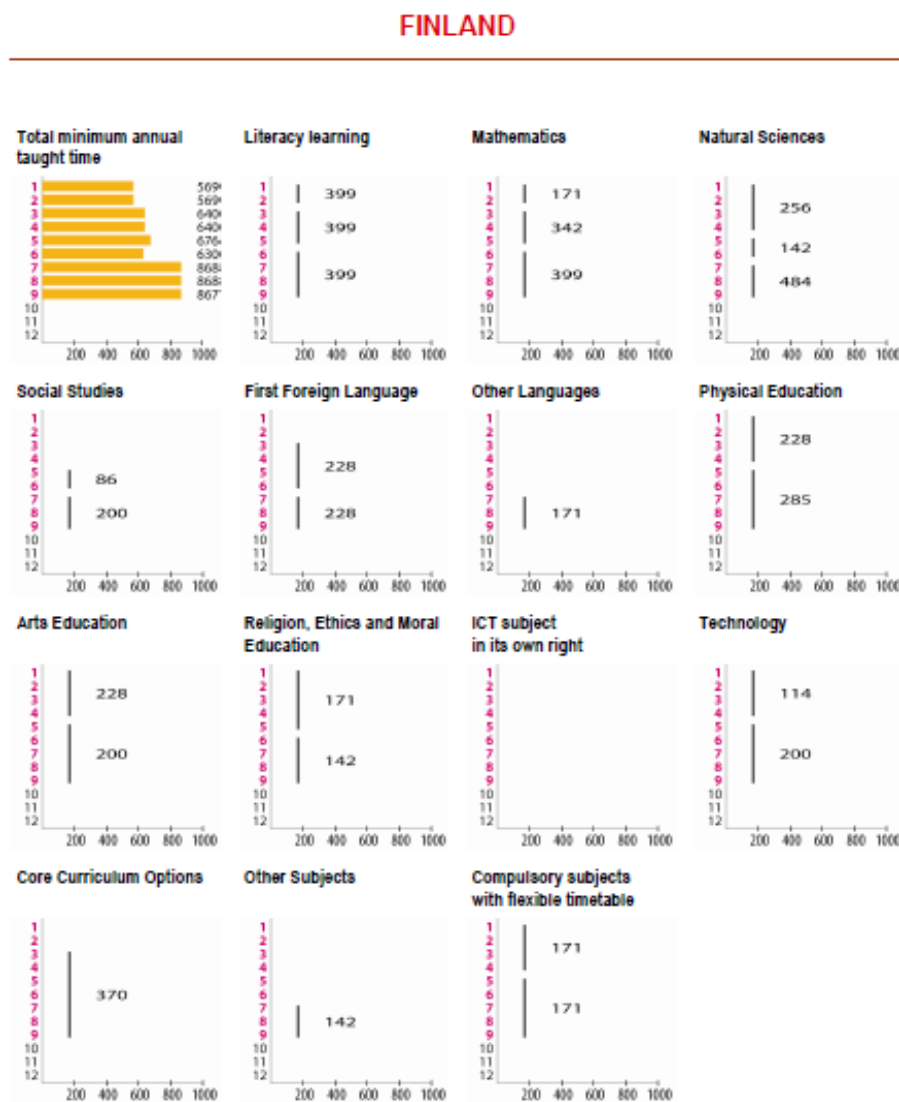
Source: Eurydice (2010) 'Organisation of the education system in Finland 2009/2010', page 82

Table 16 Recommended annual taught time in Finland

The below table is taken from page 79 of the Eurydice report *Recommended annual taught time in full-time compulsory education in Europe 2009/10*, available from the 'Facts and Figures' page of the Eurydice website:

http://eacea.ec.europa.eu/education/eurydice/tools_en.php

Recommended annual taught time in full-time compulsory education in Europe, 2009/10



Note

The indicated values for 'Total annual taught time' are an estimate as the number of hours for each area are not defined per year, but depending on the subject they are allocated over 2-5 years. The education provider can decide subject allocation within the frames given in the Government's decision for distribution of taught time. The local curriculum can be specified in which year for example language teaching begins. First foreign language can be taught even from the first grade.

The category 'Other subjects' includes "Home economics and Educational and vocational guidance".

- Flexible time
- | x Number of hours distributed between various school years

Horizontal axis: Number of hours per school year
 Vertical axis: Grades
 n : Compulsory education

Source: Eurydice.

Box 1

The below extract is from the *National Core Curriculum for Basic Education 2004* page 254, available from the Finnish National Board of Education website:

[Hhttp://www.oph.fi/english/publications/2009/national_core_curricula_for_basic_educationH](http://www.oph.fi/english/publications/2009/national_core_curricula_for_basic_education)

7.20 OPTIONAL SUBJECTS

The task of instruction in basic education's optional subjects is to deepen and broaden knowledge and skills in basic education's core subjects, especially home economics and other artistic and skill subjects; and, as desired, in cross-curricular themes, in accordance with the pupil's choice. It is also the task of instruction in optional subjects to give pupils a chance to deepen their personal interests and find new objects of interest. Optional subjects have to support the objectives of basic education.

Section 6 of Government Decree 1435/2001 defines the combined minimum number of weekly lessons in optional subjects, and the distribution of that number of weekly lessons among

- specialized and applied syllabi in school subjects
- modules formed from several subjects
- foreign languages
- subjects connected with information technology.

The name, breadth, objectives, and contents of each optional subject are decided upon in the curriculum, as are the grade levels at which the subject is to be offered.

In the case of foreign languages, the objectives and core contents of languages to be taught as the A- and B- languages are defined in this national core curriculum. Decisions about other optional languages are made in the local curriculum.

If, in the lesson-hour distribution approved by the education provider, the minimum number of weekly lessons stipulated in the Basic Education Decree is exceeded, the weekly lessons can also include optional subjects to the extent of that excess.

The distribution of lesson hours in the first through fourth grades reserves six weekly lessons per year for core instruction in arts, crafts, and physical education, in addition to the minimum number of lessons for these subjects. In the fifth through ninth grades, too, six weekly lessons per year are devoted to core instruction in these subjects. In the local curriculum, core instruction in arts, crafts, and physical education can be allocated among the aforementioned subjects as core subjects for all pupils; or that time, or part of it, may be left as specialization studies, optional for each pupil, in these subjects.

7. France

7.1 Curriculum structure and organisation

There is central, state control of the curriculum in France and a statutory national curriculum. This is delivered through the vehicle of 'national programmes', which for all subjects (even optional ones) set out the knowledge students should acquire and which provide the framework around which institutions organise their teaching. The compulsory national programmes contain both the facts that children and young people must learn and the expected outcomes of learning.

In addition, in July 2006, the decree instituting the provisions of the 'Act on the Future of Schools' laid the foundations for the introduction of the *socle commun de connaissances et de compétences* (the common foundation of knowledge and skills), which determines the skills and competences to be acquired by all students at the end of compulsory education.

The *socle commun* defines fundamental knowledge; it is not intended to be a minimum core curriculum but to be the starting point from which the curriculum is built. It aims to give an overall meaning to all compulsory education, demonstrating its main themes, purposes, objectives and essential content. In addition to knowledge and skills, the *socle commun* also highlights attitudes. The *socle commun* has seven pillars; each is divided into knowledge, abilities and attributes/attitudes. The pillars are:

- mastering the French language;
- speaking a modern foreign language;
- acquiring basic knowledge in mathematics and science;
- developing a humanist culture;
- mastering information and communication technology;
- acquiring social and civic skills;
- developing autonomy and initiative.

The national programmes can be downloaded from the *Eduscol* website –

<http://www.eduscol.education.fr/>

The *socle commun* is available to download from the following page:

<http://www.education.gouv.fr/cid2770/le-socle-commun-de-connaissances-et-de-competences.html>

The compulsory national curriculum applies to *elementary school* (children aged six to 11), *collège* (11- to 15-year-olds) and the compulsory initial year of upper secondary (*lycée*)

education (students aged 15-16). Delivery of the national curriculum is broken down across the following stages/phases:

- *école maternelle* - pre-compulsory school which caters for children from age two or three to six years (the final year - five- to six-year-olds - is part of the basic learning cycle);
- *cycle des apprentissages fondamentaux* - basic learning cycle for six- to eight-year-olds;
- *cycle des approfondissements* - primary consolidation cycle for eight- to 11-year-olds;
- *cycle d'adaptation* - lower secondary adaption cycle for 11- to 12-year-olds;
- *cycle central* - central cycle for 12- to 14-year-olds;
- *cycle d'orientation* - guidance cycle for 14- to 15-year-olds;
- *seconde* - determination cycle for 15- to 16-year-olds;
- *cycle terminale* - final cycle for 16- to 18-year olds (post-compulsory education).

The curriculum for both pre-compulsory and compulsory is statutory and defined by legislation.

7.2 Curriculum review

The most recent review of the curriculum took place in 2006 and came into force in 2008.

The main reason for the review was the necessity to ensure that the *socle commun* was covered in the curricula. As mentioned above, the *socle commun* now constitutes the reference for the drafting of national educational programmes, at pre-school, primary (six to 11-year-olds) and compulsory secondary level (ages 11 to 16). The text presents the set of values, knowledge, languages and practices that 'need to be mastered in order to allow each pupil to successfully complete his or her school, continue his/her education and professional future and contribute to society'.

The principles of the *socle commun* cover pre-school education (for two- to six-year-olds) as this phase, while not being a compulsory phase of education, is regarded as an important bridge to/preparation for primary education.

At primary level, the aim of the new/revised curriculum is to reduce the number of children leaving primary education with serious difficulties. The four key changes from the previous curriculum include:

- a simplified timetable with a focus on French and maths, and an increase in the amount of time allocated to sport;
- the introduction of other types of knowledge in the curriculum - for example, introducing history of art from the first year of primary education (ages six to seven);

- the replacement of civics education with civic and moral education;
- a strong link between pre-school and primary programmes.

Work to ensure that the common core of knowledge and skills is reflected in the national programmes of study has been completed for the compulsory phases of education.

There is no specific curriculum review cycle in France; reviews of the curriculum are ad hoc in response to emerging issues. Curriculum reviews are determined/decided on by the Minister of Education of the time, in accordance with current reforms in education or the necessity to revise/ renew earlier documents/previous texts.

7.3 Lower secondary qualifications

Lower secondary education ends at age 15. However students must complete the first year of upper secondary education (known as the *seconde*) before they may leave school at age 16.

At the end of lower secondary education in the *collège* (age 15), students take a lower secondary leaving examination (*diplôme national du brevet*) which was introduced in 1987.

The *brevet* comprises three written tests in each of French, mathematics and history/geography and is designed to assess a student's level of knowledge and ability, by reference to the national curriculum. In addition, the first compulsory tests in civics education were introduced to the tests for the *diplôme national du brevet* in 2000.

The student's overall mark in the *diplôme national du brevet* takes into consideration his/her results in this examination, together with marks received for work completed over the last two years of *collège* (aged 13 to 15) (continuous assessment).

The *diplôme national du brevet* does not permit a student to enter the professional/work environment. It simply confirms that he/she has satisfactorily completed lower secondary education.

At the end of the *seconde* (at age 16), students have a choice of studies for the final two years of secondary education. They choose one from:

Either

- Three types of general *Baccalauréat*: *BAC L* (literary - main subjects are French, philosophy and modern languages), *BAC ES* (economic and social sciences), and *BAC S* (scientific - main subjects are mathematics, physics and natural sciences);

- Four types of technological *Baccalauréat*: Healthcare and social science and technology (ST2S), Industrial sciences and technologies (STI), Laboratory science and technology (STL), and Management science and technology (STG);
- Three specific technological *Baccalauréats* for the hotel trade, applied arts, and the techniques of music and dance.

Or

- The technical certificate (*brevet de technicien*). This provides a qualification as a specialist technician and the curriculum includes common and compulsory general courses (French, introduction to the modern world, a modern foreign language, mathematics, and physical education and sport), as well as specific courses according to the specialisation chosen, and technological and vocational courses. Students who have been awarded a *brevet de technicien* can either enter employment, by taking up a position corresponding to their specialisation, or continue their studies, primarily in higher technical sections (STS) or in a university institute of technology (IUT). (Some *brevets de technicien* can be studied for on completion of the *troisième* by entering a specific *seconde* class.)

Or

- a vocational *Baccalauréat* course at a *lycée professionnel*.

Students may also follow courses which lead to the award of a *certificat d'aptitude professionnel* (CAP) (vocational aptitude certificate) and *brevet d'études professionnelles* (BEP) (vocational studies certificate) in a *lycée professionnel*.

7.4 Curriculum subjects

Table 17 Compulsory and optional subjects in the France school curriculum for pre-compulsory and compulsory phases of education

Compulsory subjects and time allocations	Optional subjects
<p><i>Ecole maternelle</i> (pre-compulsory school which caters for children from age two or three to six years)</p> <p>The compulsory subjects during this phase of education are:</p> <ul style="list-style-type: none"> • introduction to the written word; • becoming a student; • movement and expression with the body; • discovering the world; • perceiving, feeling, imagining and creating. <p>The weekly length of the basic learning cycle - which incorporates the final year of pre-primary education for five- to six-year-olds - is 24 hours. The maximum amount of class time per day is six hours.</p> <p>The school day/timetable is not structured around the distribution of subjects with strict limits and schedules. The teacher organises the day's activities, respecting both the needs of the children and the skills which need to be acquired and which are defined by the different national programmes for each cycle.</p>	<p>Schools may choose to include the study of a regional or foreign language. However, there are generally no options for students.</p>

**Programme du cycle des apprentissages fondamentaux
(basic learning cycle for six- to eight-year-olds)**

Compulsory subjects	Hours per week
French	10
Mathematics	5
Physical education and sport	9*
Modern foreign language	
Arts	
Discovering the world	
Total	24

* The weekly allocation of time dedicated to these subjects is decided by the teacher.

Schools may choose to include the study of a regional or foreign language. However, there are generally no options for students.

Programme du cycle des approfondissements (primary consolidation cycle for eight- to 11-year-olds)

Compulsory subjects	Hours per week
French	8
Mathematics	5
Physical education and sport	11*
Modern foreign language	
Experimental sciences and technology	
Humanities	
Arts (culture) and history of art**	
History, geography and civics	

* The weekly allocation of time dedicated to these subjects is decided by the teacher.

** 20 hours is allocated each year for the study of the history of art.

Although the official language of education is French, some regional languages, such as Breton, Catalan, Corsican, Occitan, Basque, Alsatian and Flemish, are still in use in certain areas of the country, and may, optionally, be taught in some schools.

Prior to the introduction of the *socle commun* in 2008, the study of modern foreign languages was optional for most children in *elementary school* education (ages six to 11), although it did become compulsory for children aged 10-11 years in all *elementary schools* in 1998. The study of a modern foreign language is now compulsory from age seven (the second year of primary

		education). In addition, there is a general tendency towards the introduction of earlier language learning. As a consequence, at primary level, schools are allowed to introduce a foreign language from age six (first year of primary).																						
<p>Cycle d'adaptation (first year of compulsory lower secondary education, 11- to 12-year-olds) – sixième</p> <table border="1"> <thead> <tr> <th>Compulsory subjects</th> <th>Hours per week</th> </tr> </thead> <tbody> <tr> <td>French</td> <td>5h or 4h 30m + 30m in ½ groups</td> </tr> <tr> <td>Mathematics</td> <td>4h</td> </tr> <tr> <td>First modern foreign language</td> <td>4h</td> </tr> <tr> <td>History-geography-civic education</td> <td>3h</td> </tr> <tr> <td>Life and earth sciences</td> <td>1h 30</td> </tr> <tr> <td>Arts and music</td> <td>1h+ 1h = 2 h</td> </tr> <tr> <td>Technology</td> <td>1h 30m</td> </tr> <tr> <td>Physical and athletic education</td> <td>4h</td> </tr> <tr> <td>Student assistance and monitoring of individual work</td> <td>2h</td> </tr> <tr> <td>Class life hours ⁶</td> <td>10h per year</td> </tr> </tbody> </table>		Compulsory subjects	Hours per week	French	5h or 4h 30m + 30m in ½ groups	Mathematics	4h	First modern foreign language	4h	History-geography-civic education	3h	Life and earth sciences	1h 30	Arts and music	1h+ 1h = 2 h	Technology	1h 30m	Physical and athletic education	4h	Student assistance and monitoring of individual work	2h	Class life hours ⁶	10h per year	Other than regional languages in certain areas of the country (see above), there are, in general, no optional subjects in the first year of compulsory secondary education (11- to 12-year-olds).
Compulsory subjects	Hours per week																							
French	5h or 4h 30m + 30m in ½ groups																							
Mathematics	4h																							
First modern foreign language	4h																							
History-geography-civic education	3h																							
Life and earth sciences	1h 30																							
Arts and music	1h+ 1h = 2 h																							
Technology	1h 30m																							
Physical and athletic education	4h																							
Student assistance and monitoring of individual work	2h																							
Class life hours ⁶	10h per year																							

⁶ 'Class life' hours are for the purpose of discussions on matters specific to school life and to allow students to express their opinion on them; to discuss other matters which might affect students and society; and to enable students to learn to respect the opinions of others. Discussions also focus on students' future (career) aspirations.

Middle cycle: (12- to 14-year-olds)		<p>All students must study a second foreign language, which they select from a number of options.</p> <p>At the beginning of the autumn term 1996, Latin was introduced to students as an optional subject in the <i>cinquième</i> (the second year of compulsory secondary education – aged 12/13), on the basis of a two-hour allocation in addition to the existing timetable. It is chosen by the student as an optional extra and is usually continued in the <i>quatrième</i> and <i>troisième</i> (students 13/14 and 14/15).</p>
Compulsory subjects	Hours per week	
French	4 to 5h	
Mathematics	3h 30m to 4h 30m	
First modern foreign language	3 to 4h	
Second modern foreign language	3h	
History-geography-civic education	3 to 4h	
Life and earth sciences	1h 30m to 2h 30m	
Physics-chemistry	1h 30m to 2h 30m	
Technology	1h 30m to 2h	
Arts and music	1 to 2h each	
Physical and athletic education	3 to 4h	
Cycle d'orientation - guidance cycle for 14- to 15-year olds		<p>All students must study a second foreign language, which they select from a number of options.</p> <p>Since the start of the of 2005/06 school year, a new optional vocational subject option (<i>découverte professionnelle</i> - professional discovery) has been available for students aged 14-15. Students are able to choose between three hours of <i>découverte professionnelle</i>, three hours of modern languages or three hours of Latin or Greek.</p>
Compulsory subjects	Hours per week	
French	4h 30m	
Mathematics	4h	
Modern foreign language	3h	
Life and earth sciences	1h 30m	
Physics-chemistry	2h	
Technology	2h	
Art courses:		
Art	1h	
Music education	1h	
Physical and athletic education	3h	
Modern language 2 (foreign or regional)	3h	
Class life hours ⁷	10h per year	

⁷ 'Class life' hours are for the purpose of discussions on matters specific to school life and to allow students to express their opinion on them; to discuss other matters which might affect

	<p>Students experiencing difficulties with academic subjects are able to take a six-hour module of <i>découverte professionnelle</i>. In such cases they are exempted from taking a second modern language.</p> <p><i>Découverte professionnelle</i> aims to provide students in this year group with an insight into the world of work and to help inform future option and career choices.</p>																										
<p>Seconde - determination cycle for 15- to 16-year olds</p> <table border="1" data-bbox="193 1043 940 1901"> <thead> <tr> <th data-bbox="193 1043 708 1137">Compulsory subjects</th> <th data-bbox="708 1043 940 1137">Hours per week</th> </tr> </thead> <tbody> <tr> <td data-bbox="193 1137 708 1182">French</td> <td data-bbox="708 1137 940 1182">4h</td> </tr> <tr> <td data-bbox="193 1182 708 1227">History/Geography</td> <td data-bbox="708 1182 940 1227">3h</td> </tr> <tr> <td data-bbox="193 1227 708 1272">Modern languages 1 and 2</td> <td data-bbox="708 1227 940 1272">5h 30m</td> </tr> <tr> <td data-bbox="193 1272 708 1317">Mathematics</td> <td data-bbox="708 1272 940 1317">4h</td> </tr> <tr> <td data-bbox="193 1317 708 1361">Physics, chemistry</td> <td data-bbox="708 1317 940 1361">3h</td> </tr> <tr> <td data-bbox="193 1361 708 1406">Earth and life sciences</td> <td data-bbox="708 1361 940 1406">1h 30m</td> </tr> <tr> <td data-bbox="193 1406 708 1451">Physical education and sport</td> <td data-bbox="708 1406 940 1451">2h</td> </tr> <tr> <td data-bbox="193 1451 708 1496">Civic, legal and social education</td> <td data-bbox="708 1451 940 1496">30m</td> </tr> <tr> <td data-bbox="193 1496 708 1541">Individual support</td> <td data-bbox="708 1496 940 1541">2h</td> </tr> <tr> <td data-bbox="193 1541 708 1592">Class hours ⁸</td> <td data-bbox="708 1541 940 1592">10h annually</td> </tr> <tr> <td data-bbox="193 1592 708 1809"> First 'exploration' subject one of : <ul style="list-style-type: none"> – Social and economic science – basic principles of management and economics </td> <td data-bbox="708 1592 940 1809">1h 30m</td> </tr> <tr> <td data-bbox="193 1809 708 1901"> Second 'exploration' subject one of: <ul style="list-style-type: none"> – Social and economic science </td> <td data-bbox="708 1809 940 1901">1h 30m</td> </tr> </tbody> </table>	Compulsory subjects	Hours per week	French	4h	History/Geography	3h	Modern languages 1 and 2	5h 30m	Mathematics	4h	Physics, chemistry	3h	Earth and life sciences	1h 30m	Physical education and sport	2h	Civic, legal and social education	30m	Individual support	2h	Class hours ⁸	10h annually	First 'exploration' subject one of : <ul style="list-style-type: none"> – Social and economic science – basic principles of management and economics 	1h 30m	Second 'exploration' subject one of: <ul style="list-style-type: none"> – Social and economic science 	1h 30m	<p>In addition to the common compulsory subjects, students are also required to choose two of the exploration subjects – as detailed in the table on the left. The study of such subjects is intended to allow students to test their preferences and aptitudes prior to commencing a specific type of <i>Baccalauréat</i> course.</p>
Compulsory subjects	Hours per week																										
French	4h																										
History/Geography	3h																										
Modern languages 1 and 2	5h 30m																										
Mathematics	4h																										
Physics, chemistry	3h																										
Earth and life sciences	1h 30m																										
Physical education and sport	2h																										
Civic, legal and social education	30m																										
Individual support	2h																										
Class hours ⁸	10h annually																										
First 'exploration' subject one of : <ul style="list-style-type: none"> – Social and economic science – basic principles of management and economics 	1h 30m																										
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students and society; and to enable students to learn to respect the opinions of others. Discussions also focus on students' future (career) aspirations.

<ul style="list-style-type: none"> – basic principles of management and economics – Health and social – Biotechnology – Science and laboratory science – Literature and society – Engineering – Scientific methods and practicals – Creative and innovative technologies – Creative and artistic activities – Ancient civilisation and language: Greek – Ancient civilisation and language: Latin – Third modern language 		
<p>The compulsory subjects take up 80 per cent of curriculum time, that is, 23h 30m each week. Each exploration subject is allocated 1h 30m a week.</p>		
<p><i>Cycle terminale - final cycle for 16- to 18-year olds</i> The choice of upper secondary qualification determines what is taught at this stage.</p>		

⁸ 'Class life' hours are for the purpose of discussions on matters specific to school life and to allow students to express their opinion on them; to discuss other matters which might affect students and society; and to enable students to learn to respect the opinions of others. Discussions also focus on students' future (career) aspirations.

8. Hungary

8.1 Curriculum structure and organisation

The content of teaching and learning at school is determined by a three-tiered curricular regulation as prescribed by legislation from the year 2000.

The central and highest level regulatory document is the National Core Curriculum (NCC), issued by the government in 1995, and obligatory for all schools. Its main function is to lay down the principles and conceptual basis of public education and, at the same time, ensure the autonomy of schools in selecting educational content. The NCC lays down the national objectives of public education, identifies the main areas of knowledge to be transmitted, provides guidelines on how to spread this content over the various phases of public education, and defines the key development tasks in the various phases. It can be accessed at: <http://www.okm.gov.hu/english/hungarian-national-core>

The second level of regulation serves as a content and methodological aid. At present, at this level, there are accredited Framework Curricula (*kerettanterv*). These were developed in the spirit of the NCC and were first issued in 2000 by the ministers responsible for education. The aim is to provide more detailed guidelines to assist in the interpretation of the NCC. Together with the NCC, these Framework Curricula serve as a point of orientation for the authors and editors of textbooks, the developers of resource materials, examination requirements and national assessment and evaluation tools, and first and foremost for the teaching staff of schools who are responsible for developing or compiling local curricula.

At the third level, educational content is regulated by local (school level) curricula. The basic requirement for local curricula (and the criterion for their authorisation) is compliance with the NCC requirements. There are three options for teaching staff in preparing a school's local curriculum: (a) the school may adopt a completed and accredited Framework curriculum (a level 2 curriculum above); (b) the school may compile its local curriculum using the available curricula, educational programmes and programme packages; (c) the school may develop - or may already have - its own local curriculum. If a school adopts a Framework Curriculum or develops its own curriculum, it must take into account the requirements of state examinations.

The key areas of learning in the NCC are:

- Hungarian language and literature;
- Modern foreign languages;
- Mathematics;
- Man and society;

- Man and nature;
- Our earth and environment;
- Arts;
- Information and technology;
- Everyday life and practical knowledge skills;
- Physical exercise and sport.

The National Core Curriculum (NCC) covers the age range for compulsory education, that is, six to 18/19 or 20. The Kindergarten Core Programme is for children aged between three and five/six.

The NCC is broken down to the different phases of education in different types of institution. This includes:

- Pre-primary (*ovoda/kindergarten*) - attendance during the final year (five to six-year-olds) is compulsory
- Single structure primary and lower secondary education (*általános iskola*) for six to 14 year olds. Basic education is divided into four cycles
 - age 6 to 8 introductory cycle;
 - age 8 to 10 rudimentary cycle;
 - age 10 to 12 foundation cycle;
 - age 12 to 14 development cycle.
- *Gimnázium* (*general lower and upper secondary*). Pupils may enrol in the *Gimnázium* at three different ages (10, 12, 14) depending on the type of institution. As a result, students receive either eight, six or four years of upper secondary education and leave at age 18/19.
- *Szakközépiskola* (upper secondary general and post-secondary non-tertiary education) (ISCED 4), ages 14-18/19/20.
- *Szakiskola* (upper secondary vocational education) age 14-16 (general), 16-18/19/20 (vocational) (ISCED 3).
- remedial lower secondary general and upper secondary vocational education (*Szakiskola*) which consists of a general remedial course of 1-2 years, and a short vocational course of 2 years. These schools mostly admit students who could not finish the single structure school (*Általános Iskola*), or have difficulties with the acquisition of basic skills (reading/writing/calculus). Students are generally aged 15/16 to 18/19/20.

The curriculum is statutory and defined by legislature.

8.2 Curriculum review

In 2003, following a review of the National Core Curriculum, the broad fields of learning were retained, but there was a shift from content to the development of tasks and competences. Cross-curricular skills became more important and detailed curriculum specifications were replaced by general development tasks.

The National Core Curriculum was last revised in 2007, with minor amendments made in 2008. The pre-school education and care curriculum was revised in 2009.

The objectives of this latter review were to:

- cater for migrant children;
- enhance equity;
- support gender equity and avoid gender stereotyping;
- focus on developing health-conscious and environmentally conscious behaviour;
- retain and confirm focus on the central role of play in early childhood education.

The Act on Public Education (1993) stipulates that the National Core Curriculum, along with the pre-school curriculum, must be evaluated regularly and at least every five years, following which the curricula must be amended if necessary.

8.3 Lower secondary qualifications

Although education is compulsory to age 18 in Hungary, at age 16, the national basic examination or *alapvizsga*, introduced under the National Core Curriculum (NCC) in 2002, must be offered by schools. This examination is optional for students but, in certain professions, successful completion of the basic examination (*alapvizsga*) is a precondition for commencing vocational training. Successful completion of the *alapvizsga* is not a requirement for progression to upper secondary education.

The development of core skills (such as reading comprehension, mathematical abilities) is monitored through nationwide assessments of competence in Years 4, 6, 8, and 10 (ages 10-16).

Students whose performance is judged inadequate when they receive their end of year marks (based on continuous assessment of written and oral class work and tests undertaken throughout the year) may be requested to repeat the year (in a specific subject, for example), or, if they appear weak in more than one subject, may be placed in a special (remedial) class.

Student performance and achievement in the general school generally determines the type of secondary school a student will go on to attend. The highest attaining academic students

tend to progress to the secondary grammar school (*gimnázium*); others proceed to some form of secondary vocational school, again dependent on attainment. Students whose achievements are not judged adequate to attend either the secondary grammar school or a 'standard' secondary vocational school are usually placed in vocational training schools, offering one- to three-year courses in a special field or profession. Such schools do not issue certificates, but prepare students for entry to the labour market.

At the end of upper secondary education (age 18/19) pupils generally take the national (upper) secondary school leaving examination (*érettségi vizsga*), which is a prerequisite for admission to higher education. This is a national, state examination, taken in accordance with uniform central examination requirements. Schools may supplement the central examination requirements with local examination requirements as prescribed by their local curriculum (in accordance with the examinations code). Since 2005, the upper secondary leaving examination has been a two-tier examination (standard and advanced levels). The advanced level offers the opportunity to achieve higher level scores for entry to higher education. Current plans are for advanced level exams to become compulsory for those wishing to continue their studies in a higher education institution - in the subject(s) related to the given HE programme.

On completion of upper secondary courses of vocational education (at age 18/19), students are required to take a vocational examination to receive a vocational upper secondary qualification.

8.4 Curriculum subjects

Table 18 Compulsory and optional subjects in the Hungary school curriculum

Compulsory subjects and time allocations					Optional subjects																																																																
<p>Kindergarten (<i>Óvoda</i>) Age 5-6 No compulsory subjects are specified for kindergarten education. Since 1 September 1999, however, kindergartens have been expected to develop their own programmes of education, based on the Hungarian Core Programme for Kindergarten Education. These are approved by the teaching staff of the kindergarten and the maintaining body (usually the local authority).</p>					<p>There are no optional subjects during this phase.</p>																																																																
<p>Általános iskola (general education) ages 6–14 (Yrs 1–4)</p> <table border="1"> <thead> <tr> <th rowspan="2">Subject</th> <th colspan="4">Teaching hour requirements in the various years of education</th> </tr> <tr> <th>Year 1 (age 6-7)</th> <th>Year 2 (age 7-8)</th> <th>Year 3 (age 8-9)</th> <th>Year 4 (age 9-10)</th> </tr> </thead> <tbody> <tr> <td>Hungarian language and literature</td> <td>296</td> <td>296</td> <td>296</td> <td>259</td> </tr> <tr> <td>Foreign language</td> <td>-</td> <td>-</td> <td>-</td> <td>111</td> </tr> <tr> <td>Mathematics</td> <td>148</td> <td>148</td> <td>148</td> <td>111</td> </tr> <tr> <td>Environment</td> <td>37</td> <td>37</td> <td>74</td> <td>74</td> </tr> <tr> <td>Music</td> <td>37</td> <td>37</td> <td>74</td> <td>56</td> </tr> <tr> <td>Drawing and visual culture</td> <td>56</td> <td>55</td> <td>74</td> <td>55</td> </tr> <tr> <td>Technology and ways of living</td> <td>37</td> <td>37</td> <td>37</td> <td>37</td> </tr> <tr> <td>Physical education and sports</td> <td>92</td> <td>92</td> <td>92</td> <td>92</td> </tr> <tr> <td>Total fixed teaching hours</td> <td>703</td> <td>703</td> <td>795</td> <td>795</td> </tr> <tr> <td>Classes outside of the framework curriculum</td> <td>37</td> <td>37</td> <td>37</td> <td>37</td> </tr> <tr> <td>Total hours</td> <td colspan="2">740</td> <td colspan="2">832</td> </tr> </tbody> </table>					Subject	Teaching hour requirements in the various years of education				Year 1 (age 6-7)	Year 2 (age 7-8)	Year 3 (age 8-9)	Year 4 (age 9-10)	Hungarian language and literature	296	296	296	259	Foreign language	-	-	-	111	Mathematics	148	148	148	111	Environment	37	37	74	74	Music	37	37	74	56	Drawing and visual culture	56	55	74	55	Technology and ways of living	37	37	37	37	Physical education and sports	92	92	92	92	Total fixed teaching hours	703	703	795	795	Classes outside of the framework curriculum	37	37	37	37	Total hours	740		832		<p>Schools also offer elective classes in consideration of the pupils' interests and needs. The maximum number of electives is set out by law for each grade in relation to the number of compulsory classes. As a result, elective classes can be 10 per cent of obligatory classes in grades 1-4, 25 per cent in grades 5-6, and 30 per cent in grades 7-8.</p> <p>Schools offer various extra-curricular sessions (e.g. study circles, self study groups, school choir, sports sessions etc in the afternoon, in response to pupil interest and demand. In this respect, there may be significant differences between schools. Some basic/general schools (<i>általános iskola</i>) offer 10-15 different types of extra-curricular activities while others only ensure three to four.</p>
Subject	Teaching hour requirements in the various years of education																																																																				
	Year 1 (age 6-7)	Year 2 (age 7-8)	Year 3 (age 8-9)	Year 4 (age 9-10)																																																																	
Hungarian language and literature	296	296	296	259																																																																	
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Music	37	37	74	56																																																																	
Drawing and visual culture	56	55	74	55																																																																	
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Total hours	740		832																																																																		

Years 5 - 8 (children aged 10 to 14)		See above			
		Teaching hour requirements by year			
		Year 5 (age 10-11)	Year 6 (age 11-12)	Year 7 (age 12-13)	Year 8 (age 13-14)
Hungarian language and literature		148	148	148	148
History and citizenship		74	74	74	74
Foreign language		111	111	111	111
Mathematics		148	111	111	111
Information technology		-	-	37	37
Nature		74	74	-	-
Physics		-	-	74	44
Biology		-	-	55	55
Chemistry		-	-	55	56
Our earth and environment		-	-	56	55
Singing and music		37	37	37	37
Drawing and visual culture		55	55	37	37
Technology and lifestyle		37	37	37	37
Physical education and sports		92	92	92	92
Class teacher's session		37	37	37	37
Syllabus modules:	Dance and Drama	18	18	-	-
	Ethnography	18	18	-	-
	Information technology	-	18	-	-
	Anthropology and social studies, ethics	-	-	37	-
	Cinema and media	-	-	-	37
	Health	-	-	-	18
Total fixed teaching hours		850	850	980	980
Classes outside the Curriculum Framework		74	74	37	37
Number of compulsory teaching hours		924	924	1017	1017

Gimnázium Years 9-12, ages 14-18+

In the *gimnázium*, from Year 11 (age 16+), the curriculum and timetable is dictated by the requirements of the upper secondary leaving examination. To successfully complete this examination, individual students have to study at least three optional subjects (in addition to the four compulsory upper secondary examination subjects and physical education). One of these optional subjects must be examined as part of the upper secondary leaving examination.

Subject	Teaching hour requirement in the various years of secondary education			
	Year 9 (students aged 14-15)	Year 10 (students aged 15-16)	Year 11 (students aged 16-17)	Year 12 (students aged 17-18)
Hungarian language and literature	148	148	148	128
History	74	74	111	96
The study of man and ethics			37	
First foreign language	111	111	111	96
Second foreign language	111	111	111	96
Mathematics	111	111	111	128
Information technology*	74			
Introduction to philosophy				32
Physics	56	92	74	
Biology		56	74	64
Chemistry	74	74		

The earth and the environment	74	74		
Music	37	37		
Drawing and visual culture*	37	37		
Physical education and sports	74	74	74	64
Home class	37	37	37	32
Modules				
Social studies	18	18	18	16
Dance and drama*	18	18		
Film and media studies			18	16
Arts **			18	16
Total of fixed teaching hours	1055	1073	962	800
Classes outside the framework curriculum	55	37	148	160
Number of compulsory teaching hours required by legislation	1110	1110	1110	960

* the number of teaching hours allocated to these subjects and modules may be rearranged in the local curriculum, and used in another Grade/Year.

**actual curriculum is defined by the school's local curriculum

Zakközépiskola age 14-18+

Subject	Annual number of contact hours			
	Year 9, students aged 14-15	Year 10, students aged 15-16	Year 11, students aged 16-17	Year 12, students aged 17-18
Hungarian language and literature	148	148	148	148
History and citizenship	74	74	111	96
Social sciences and ethics			37	
Foreign language	111	111	111	96
Mathematics	111	111	111	96
Singing and music*	37	37		
Drawing and visual culture*			37	37
Class teacher lesson	37	37	37	32
Physical education and sports	74	74	74	64
Physics				
Our earth and environment				
Biology	259**	259**	74***	64***
Chemistry				
Information technology				
Career orientation, field specific	185	185	296	256

In secondary vocational schools (*szakközépiskola*) and vocational training schools (*szakmunkásképző iskola*), the curriculum, timetable, number of, types of and time allocated to elective subjects varies widely dependent on the specific course(s) being followed.

The time available for this purpose constitutes 45 per cent of obligatory classes for grades 9-10, 60 per cent for grades 11-13, and five per cent for vocational training grades. The school may organise extra-curricular activities (special interest and self education groups, sports groups, school choir, etc.) according to student needs, interests and its own pedagogical programme. Supervised afternoon study sessions also belong to this scope of school services, which, according to parents' needs, provide the opportunity for organised learning outside the classroom. Two hours a day are available for this purpose in grades 9 and 10.

Freely planned activity	74	74	111	96
Total	1110	1110	1110	960

*The number of teaching hours allocated to these subjects and modules may be rearranged in the local curriculum, and used in another Grade/Year.

**A minimum of 111 lessons each must be devoted to the teaching of physics, geography, biology, and chemistry in years 9 and 10.

***Individual schools decide which of these five subjects they wish to offer students in years 11 and 12 (in preparation for the upper secondary school-leaving examination) and timetable this accordingly.

Individual secondary vocational schools are responsible for deciding on the content and requirements of vocational orientation and field-specific foundation education in their local syllabuses. The framework curriculum for secondary vocational schools sets the divisions as follows:

Subject	Annual number of contact hours			
	Year 9, students aged 14-15	Year 10, students aged 15-16	Year 11, students aged 16-17	Year 12, students aged 17-18
Theory	74 - 111	74 - 111	74 - 222	64 - 192
Practice	74 - 111	74 - 111	74 - 222	64 - 192
Vocational/career orientation total	185	185		
Field-specific training total			296	296

9. Japan

9.1 Curriculum structure and organisation

The Ministry of Education, Culture, Sports, Science and Technology (MEXT) lays down national guidelines for school curricula. The broad guidelines for the objectives and standard content of each school subject are specified in 'Courses of Study'.

There is a statutory curriculum for children during the pre-compulsory (ages three to six), compulsory (ages six to 15) and post-compulsory phases (ages 15-18).

The statutory curriculum during the compulsory phase in Japanese schools (ages six to 15) (both private and public) includes:

- Japanese language;
- mathematics;
- social studies;
- science;
- moral education (includes moral character education and social relationships);
- music;
- art;
- health and physical education;
- industrial arts and homemaking (home economics and family life);
- foreign languages;
- geography and history;
- civics;
- integrated studies.

(Integrated studies introduces experiential learning such as experiences in nature, social life experiences, observation, experiments, field study and investigation and project work, as well as learning by problem-solving. The aim is to assist children in learning about cross-curricular subjects such as the environment, international understanding (includes the learning of foreign languages as well as foreign cultures), information, health and welfare and other subjects of particular interest to individual children.)

The statutory curriculum comprises three main strands - compulsory subjects; moral education; and special activities. See Table 19 below for the full level of detail.

Although school is only compulsory between the ages of six and 15, 'Courses of Study' cover the age range three to 18 years:

- Pre-compulsory, pre-school education in *kindergarten*, ages three to six;
- compulsory primary education in *elementary schools*, ages six to 12;
- secondary education in compulsory lower secondary schools (*junior high schools*), ages 12 to 15;
- secondary education in post-compulsory *senior high schools*, ages 15-18.

The curriculum is statutory and defined by legislature.

9.2 Curriculum review

The current curriculum guidelines were last revised in 1998 and came into effect in 2002 (in *elementary schools* for six- to 12-year-olds) and in 2003 (in high schools for 12- to 18-year-olds).

Following a revision of the curriculum guidelines by the Education Ministry in 2008/09, Courses of Study have been revised, and there are plans to fully implement these new guidelines as follows:

- In *elementary schools* for six- to 12-year-olds in the 2011 school year (April 2011-March 2012);
- In *junior high schools* (12- to 15-year-olds) in the 2012 school year;
- In *high schools* (15- to 18-year-olds) in 2013.

The 2002 revised Courses of Study specifically:

- reduced the number of class hours and curriculum content ;
- established a period of 'integrated studies';
- expanded elective courses;
- enhanced instruction to meet individual requirements throughout the entire school curriculum;
- emphasised experiential problem-solving learning activity throughout the school curriculum.

The draft 2008/09 guidelines propose increasing class hours for key school subjects by 10 per cent, particularly in maths and science (the first increase in class hours and learning content in about 30 years). They also call for: strengthening language, tradition and cultural education in all school subjects; making foreign language activities compulsory in *elementary school*; and propose reinforcing moral education.

The guidelines for high schools propose that the current mandatory electives in Japanese, mathematics and English are abolished and required courses established instead. At high

school level, the number of credits students are required to earn for high school graduation will remain at the current minimum of 74 credits. Changes will focus on the importance of balancing commonality and diversity in curriculum; for example making Japanese language, mathematics and foreign language required subjects while making scientific subjects more flexible. Schools will also have to provide students with opportunities for remedial study of what they should have mastered in middle school (*junior high school*) if necessary.

The Courses of Study were first prescribed in 1947. Since then, they have been revised every ten years or so.

9.3 Lower secondary qualifications

Lower secondary education and compulsory education end at age 15.

There are no national assessment schemes. Individual institutions arrange assessment which takes place at the end of lower secondary education (age 15, the record of which may influence entry to *senior high school*) and at the end of upper secondary education (age 18, when a Certificate of Upper Secondary Education is issued by each institution.) This Certificate is just one of the requirements for entry to higher education.

With regard to entrance examinations for local public upper secondary schools (*senior high schools*), while scholastic (academic) tests are often administered by the prefectural or municipal boards of education which establish the schools, the selection of entrants itself is conducted by each school under the supervision of the respective boards of education, and in accordance with regulations and standards set by the boards regarding admissions procedures. National and private post-compulsory upper secondary schools conduct their own entrance examinations.

In some cities, the public authorities may set the exams and allocate children to public *senior high schools* on the basis of the candidates' results. Where *senior high school* entrance exams are set by the Ministry of Education, these are in English, Japanese, mathematics, science and social science.

Throughout *junior high school*, teachers also conduct informal continuous classroom assessment of their students, using either teacher-devised or (most often) ready-made tests, particularly in Japanese and arithmetic. Such tests tend to be written and in multiple choice format.

Credentials from lower secondary education (the results of internal teacher assessment in *junior high school* and in the prefecture-set achievement tests on completion of *junior high school*) are important in influencing student admission to post-compulsory upper secondary education. Admission is, however, mostly dependent on student performance in the entrance examination for the upper secondary school concerned.

Students who fall behind are not provided with extra programmes after school, but usually attend *jukus* (special private schools that offer lessons after school) or similar establishments.

As a basic qualification for admission to higher education in universities (*daigaku*) or *junior colleges* (*tanki-daigaku*), applicants are required to have completed post-compulsory secondary school or a 12-year formal education - at the end of which a Certificate of Upper Secondary Education is awarded. There are now three options, general, vocational or integrated certificates. Each university or *junior college*, either national, local public or private, then selects its entrants according to its own admissions procedures, using the applicant's post-compulsory secondary school credentials, scholastic tests, interviews, short papers, practical skill tests and other means.

9.4 Curriculum subjects

Table 19 Compulsory and optional subjects in the Japan school curriculum for pre-compulsory, compulsory and post-compulsory phases of education

Compulsory subjects and time allocations	Optional subjects
<p>Pre-compulsory pre-school education (<i>kindergarten</i>, ages three to six)</p> <p>In addition to teaching the first stages of reading and arithmetic, many Japanese <i>kindergarten</i> aim also to develop the more general intellectual skills of thinking, observation, learning and general intelligence. To this end, the aims and contents of the <i>kindergarten</i> curriculum framework (adopted in April 1990), the revised 'National Curriculum Standards for Kindergartens' (introduced in April 2000) and the Course of Study for Kindergarten (introduced in 2009) focus on five inter-related curriculum aspects:</p> <ul style="list-style-type: none"> • Health; • Human relationships; • The environment; • Language; • Expression. <p>Within each of these areas, 'aims' describe the feelings, attitudes and desires which are expected to be developed by the time infants leave <i>kindergarten</i>. 'Content' is the specified material to be taught in order to achieve these aims. The five areas interact with each other and should be achieved through children's experiences in <i>kindergarten</i>. The overall aim is, through play, to promote intellectual development and qualities of self-reliance and awareness of others.</p> <p>The Japanese pre-compulsory curriculum consists largely of constructive play and learning social behaviour. Pre-school education concentrates on "fun" activities: making friends and learning how to operate within a group.</p> <p><i>Kindergartens</i> are expected to provide education based on the above curriculum framework for a standard four hours each day.</p>	<p>There are no optional subjects during this phase.</p>

They are, however, also expected to give appropriate consideration to children's varying circumstances, such as the level of the child's physical and mental development and the season of the year. The minimum number of weeks per year of *kindergarten* education based on the curriculum should be 39, except under special circumstances.

The Courses of Study for Kindergartens (2008) can be downloaded in full from:

http://www.mext.go.jp/component/english/_icsFiles/afieldfile/2011/04/07/1303755_002.pdf

Compulsory primary education (*elementary schools, ages six to 12*)

The *elementary school* year consists of at least 35 weeks (34 weeks in Year 1). Minimum hours of instruction vary from 17 to 20 hours each week (dependent on the age of the children).

The compulsory subjects in Japanese *elementary schools* (both private and public) are (per annum in actual hours):

There are no optional subjects during this phase.

Grade	1	2	3	4	5	6
Age in years	6-7	7-8	8-9	9-10	10-11	11-12
COMPULSORY SUBJECTS						
Common/core subjects						
Japanese	204	210	176	176	135	131
Social studies	-	-	53	64	68	75
Mathematics	86	116	113	113	113	113
Science	-	-	53	68	71	71
Life environment studies	77	79	-	-	-	-
Music	51	53	45	45	38	38
Art and handicrafts	51	53	45	45	38	38
Homemaking	-	-	-	-	-	-
Physical education	68	68	68	68	68	68
Total core subjects	536	578	552	578	574	574

ELECTIVES	-	-	-	-	-	-
Total electives	-	-	-	-	-	-
OTHER COMPULSORY ACTIVITIES/ STUDY AREAS						
Moral education	26	26	26	26	26	26
Homeroom activities	26	26	26	26	26	26
Integrated study	-	-	79	79	83	83
Total other compulsory activities/study areas	51	53	131	131	135	135
GRAND TOTAL	587	630	683	709	709	709

Secondary education in compulsory lower secondary schools (*junior high schools*), ages 12-15

Time allocation prescribed by the Course of Study for *junior high schools* per annum in hours:

The amount of time allocated to the study of elective/ optional subjects increases as students progress through the three years of *junior high school*.

Club activities in after-class hours are also important in Japanese school life. Most students participate in sports and culture study clubs, and most schools offer sports such as baseball, soccer, tennis, swimming, and judo. Other clubs are devoted to orchestra, chorus, opera and traditional flower arranging. Club activities and extra-curricular activities usually run from around 3:30 - 3:40 pm (when school ends) to around 6:00 pm.

Grade	7	8	9
Age	12-13 years	13-14 years	14-15 years
COMPULSORY SUBJECTS			
Common/core subjects			
Japanese	117	88	88
Social studies	88	88	71
Mathematics	88	88	88

Science	88	88	67
Music	38	29	29
Fine art	38	29	29
Industrial arts and homemaking	58	58	29
Health and physical education	75	75	75
Foreign languages	88	88	88
Total core subjects	675	630	563
ELECTIVES Selected from the above core subjects (more than two for Year 9)	0-25	42-71	88-138
Total electives	0-25	42-71	88-138
Sub-total	675-700	671-700	650-700
OTHER COMPULSORY ACTIVITIES/STUDY AREAS			
Moral education*	29	29	29
Special activities/homeroom activities*	29	29	29
Integrated study**	58-83	58-88	58-108
Total other compulsory activities/study areas	117-142	117-146	117-167
GRAND TOTAL	817	817	817

***Moral education and special activities**

Although as a compulsory subject area, *moral education* is accorded, on average, only one class hour per week, it is a theme which permeates all aspects of school life. It is compulsory for Japanese children from the age of six and continues throughout their schooling but, in addition to being taught as a specific theme, the "attitudes and values" ("kokoro") of *moral education* are also emphasised in the learning of all other subjects in Japanese elementary and secondary education, and in various daily activities (called "special activities" or "homeroom activities") which children are expected to carry out in school. The four fundamental principles of *moral education* are to learn:

- Self-control;
- To live and communicate with others;
- To respect the environment, nature and beauty: to understand the importance of life;
- To respect the rules by which people live/society is organised: justice, equality; enjoyment of one's work etc.

**** Integrated study**

The integrated study period, introduced with the 2002 *junior high school* Course of Study review, introduces experiential learning such as experiences in nature, social life

experiences, observation, experiments, field study and investigation and project work, as well as learning by problem-solving. The aim is to assist children in learning about cross-curricular subjects such as the environment, international understanding, information, health and welfare and other subjects of particular interest to individual students.

Secondary education in post-compulsory senior high schools, ages 15-18

The Ministry of Education, Culture, Sports, Science and Technology (*MEXT*)-specified Course of Study for Upper Secondary Schools specifies: those subjects to be offered in post-compulsory upper secondary schools (ages 15-18); the objectives and standard content of each subject; and the standard number of credits to be acquired.

Over three years of study students have to acquire 74 or more credits to complete post-compulsory secondary education.

English and the history of Japan are the optional subjects which are favoured by the majority of students during post-compulsory upper secondary education. This is probably because these subjects are important ones in the university entrance examinations.

Compulsory credits - curriculum from April 2003

Japanese language	4 credits
Geography and history	4 credits from two selected subjects. One subject must be world history (selected from World History A or World History B options), the other can be selected from Japanese History A/B or Geography A/B
Civics	4 credits from 'the study of contemporary society', or 2 credits each from 'ethics' and 'politics and economics'
Mathematics	4 credits from Mathematics 1
Science	4 credits from two selected subjects (from biology, chemistry, physics, comprehensive science or earth science)
Health and physical education	9 credits from PE and health
Art	3 credits from music, fine arts, crafts or calligraphy

Home economics	4 credits from either general home economics, living skills or general living skills.
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The remaining credits are acquired either by obtaining additional credits in the compulsory subjects, or by credits achieved from specialist subjects, such as vocational or technical subjects or from credits for other elective subjects such as English or other foreign languages.

10. Korea

10.1 Curriculum organisation and structure

The Ministry of Education, Science and Technology (*MEST*) has overall responsibility for control of the curriculum. The National Curriculum literature establishes different goals and objectives for pre-compulsory *kindergartens* (ages three to six), compulsory *elementary schools* (ages six to 12), lower secondary *junior high schools* (ages 12-15), and post-compulsory upper secondary *high schools* (ages 15-18).

Article 23 of the Elementary and Secondary Education Act states that: schools should administer the curriculum; that the Minister of Education has the power to determine the standards and content of the curriculum; and that school superintendents may establish further standards and content to reflect their district's particular situation (within the limits of the curriculum set by the Minister).

The Korea Institute of Curriculum and Evaluation (KICE) is responsible for research involved in curriculum development and student assessment.

The National Curriculum determines general standards for the local community- and school-level curriculum. It is divided into: a general introductory section, which includes the Direction of Curriculum Design; Educational Goals by School Level; Organisation of the Curriculum and Time Allocation; Guidelines for the Formulation and Implementation of the Curriculum; and an explanatory section which describes the curriculum in detail by subject.

The National Curriculum of Korea consists of:

- the National Common Core Curriculum, from Grade/Year 1 to Grade/year 10, ages six to 16
- the Elective Curriculum (Grade/Year 11 and 12, ages 16-18)

It is intended to:

- help students lead trends toward social change;
- offer a National Common Core Curriculum and an Elective-Centered Curriculum;
- optimise the standards of the subject areas for in-depth learning;
- provide different areas of learning and diverse teaching and learning methods according to students' ability, aptitude, and interests;
- promote the autonomy of local schools in organising and implementing their own curriculum;
- establish a curriculum assessment system in order to control the quality of education.

An online guide to the curriculum framework in Korea is available from the National Curriculum page of the Korea Institute of Curriculum and Evaluation (KICE) website: <http://www.kice.re.kr/en/resources/curriculum01.jsp>

As detailed above, in Korea, the curriculum is determined by legislation.

10.2 Curriculum review

The Seventh National Curriculum, introduced on December 30, 1997, began to be implemented in the primary first and second grades (Year 1 and Year 2, six- to eight-year-olds) in the 2000 school year. By 2004, it had been introduced in all year groups up to and including 12th grade (18-year-olds).

The curriculum was revised in 2009 and plans for 2011 have also been produced to be implemented from this year. The plans for 2011 include: increased school autonomy with regard to the curriculum; ensuring that elective subject courses in high school offer differentiated and customized courses that take into account students' career paths and aptitudes; a significantly reduced study load; and improvements in the development of core competencies through school education.

Prior to 2000, the curriculum was revised regularly in accordance with a five- to ten-year cycle since the first revision in 1954/55. The usual practice was to revise both sections (the general introductory section and the detailed curriculum/subject section) at the same time. The school curriculum is now revised upon demand in Korea, with the different sections being adjusted at different times such as the general introduction only, the subject curriculum part only, or the general introduction and curriculum sections together. In recent years, partial revisions have increasingly become the norm. For example, in 2008, revisions were made to add the new subject of health education, and the curriculum for the English language was revised to increase the number of hours of instruction. In 2009, the social studies curriculum was revised to expand its content to include economic education.

10.3 Lower secondary qualifications

Compulsory lower secondary ends at age 15, but the common core curriculum continues until age 16.

There is no national examination on completion of lower secondary phase education. However, students will need to take an entrance exam for entry to some upper secondary schools (age 15+).

Most students usually move up to the next Grade level, regardless of their results in the national assessment of educational achievement or continuous assessment. Students' results can also be used as a reference for gifted children who merit being transferred to a special programme. Students who have been identified earlier in their school careers as being particularly gifted in one of foreign languages, sciences, or art and athletics are likely to be selected for the appropriate specialist (foreign language, science or art and athletics) upper secondary *high school*. These schools were founded with the express aim of developing the potential of such students to the maximum.

All students who wish to go to college (*junior college*) or university after completing their *high school* education have to take the College Scholastic Ability Test (CSAT). The CSAT is a national exam implemented in 1994. Early each year, institutions announce their student admission criteria and the relative weights assigned to the various elements such as CSAT score, comprehensive high school records, institution-administered examinations, interviews, essays and recommendation letters.

Since 2005, the CSAT has involved a written test in five main subject areas:

- Korean language;
- Mathematics: a choice of one from: differentiation and integration; probability and statistics; or discrete mathematics;
- English: including listening and speaking items;
- Social studies, science, and vocational education: from each of these areas, students select a topic on which to be tested, as follows:
 - Social studies - students select from a choice of four which includes: Korean geography; world geography; economic geography; Korean modern and contemporary history; Korean history; world history; law and society; politics; economics; society and culture; ethics
 - Science - a choice of four from: physics I; physics II; chemistry I; chemistry II; biology I; biology II; earth science I; earth science II

- Vocational studies - a choice of one from: agriculture; industry; commerce; fishery and marine transportation; home economics; and vocational education.
- A second foreign language from: German; French; Spanish; Chinese; Japanese; Russian; Arabic; or Old Korean.

The CSAT is currently being revised (applicable from 2014) and the pressure on students taking the test will be significantly reduced in preparation for when the college entrance system will be changed to one centred on an admissions office system.

10.4 Curriculum subjects

Table 20 Compulsory and optional subjects in the Korea school curriculum for pre-compulsory, compulsory and post-compulsory phases of education

Compulsory subjects and time allocations	Optional subjects
<p>Pre-compulsory, kindergarten, ages three to six Pre-school (<i>kindergarten</i>)/early childhood education focuses on providing an appropriate environment and services for nurturing children and ensuring that they achieve their full potential through a range of enjoyable activities. A focus on diversified content and methods of instruction is an important component.</p> <p>The curriculum covers five life areas:</p> <ul style="list-style-type: none"> • Health; • Society; • Expression; • Language; • Enquiry/exploration in daily life. 	<p>Not applicable during this phase</p>

<p>Primary, elementary school, ages six to 12, compulsory</p> <p>Time allocation - Seventh National Curriculum <i>Elementary School</i> Curriculum - Minimum Instructional Hours (40 minutes) by Subject and Grade/Year Level during 34 School Weeks a Year (30 'academic' study weeks in Grade/Year 1, plus an additional four weeks of 'orientation' activities)</p>	<p>The Seventh National Curriculum includes optional/elective activities (or school discretionary time/independent activities) and extracurricular or special activities. It extends school discretionary time (optional/elective, independent activities), which is used mainly to encourage students' self-directed learning in schools, and to afford extra time for students' independent study and creative activities within school. Optional activities are divided into subject optional activities and creative optional activities. Extracurricular activities/ special activities comprise student government activities, self-development activities, social service activities, event activities etc.</p> <p>While <i>elementary schools</i> are afforded some flexibility in allocating optional activities, <i>MEST</i> recommends that <i>elementary schools</i> place an emphasis on creative optional activities, rather than on in-depth and supplementary study of school subjects, in order to foster students' self-directed learning abilities.</p> <p>Schools may allocate more instructional hours (units) to extracurricular activities than those specified in the time allocation standards, and operate the programmes flexibly by integrating or splitting units.</p>
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Years 1-2

Subject	Year 1 (age 6 -7)	Year 2 (age 7 - 8)
Korean language	210	238
Mathematics	120	136
Disciplined life	60	68
Intelligent life	90	102
Pleasant life	180	204
'We are the first graders' (orientation programme)	80	n/a
Optional/independent activities	60	68
Extra-curricular/special activities	30	34
Total hours per annum	830	850

Years 3 - 6

Subject	Year 3 (age 8 - 9)	Year 4 (age 9 - 10)	Year 5 (age 10 - 11)	Year 6 (age 11 - 12)
Moral education/ethics	34	34	34	34
Korean language	238	204	204	204
Mathematics	136	136	136	136
Social studies	102	102	102	102
Science	102	102	102	102
Physical education	102	102	102	102
Music	68	68	68	68
Fine arts	68	68	68	68
Practical arts (technology and home economics)	-	-	68	68

English (Foreign language)	34	34	68	68
Extra-curricular/ special activities	34	68	68	68
Optional courses/ independent activity/ school discretionary time	68	68	68	68
TOTAL MINIMUM HOURS OF INSTRUCTION (per annum)	986	986	1,088	1,088

Lower secondary, junior high school or middle school, age 12-15, compulsory

Time allocation, Seventh National Curriculum for junior high school - Minimum Instructional Hours (45 minutes) by Subject and Grade/Year Level during 34 School Weeks a Year.

The Seventh National Curriculum includes optional/elective activities (or school discretionary time) and extracurricular activities. It extends school discretionary time to encourage students' self-directed learning in schools, and to afford extra time for students' independent study and creative activities within school. Optional activities are divided into subject optional activities and creative optional activities. Extracurricular activities comprise student government activities, self-development activities, social service activities, event activities etc.

Subject	Grade 7, age 12-13	Grade 8, age 13-14	Grade 9, age 14-15
Moral education	68	68	34
Korean language	170	136	136
Mathematics	136	136	102
Social studies	102	102	136
Science	102	136	136
Physical education	102	102	68
Music	68	34	34
Fine arts	34	34	68
Practical arts (technology and home economics)	68	102	102
English (foreign language)	102	102	136
Extra-curricular activities	68	68	68
Optional courses/ school discretionary time	136	136	136
TOTAL MINIMUM INSTRUCTIONAL HOURS (45 minutes in junior high school) (per annum)	1,156	1,156	1,156

Post-compulsory upper secondary, high school ages 15-18

High School Curriculum - from March 2002 - Minimum Instructional Hours (50 minutes) by Subject and Grade/Year Level during 34 School Weeks a Year

Under the Seventh National Curriculum, students in Year 11 of *high school* (aged 16-17) have, since the start of the 2003 academic year (March), been able to choose the courses they wish to take. Students in Year 12 (17- to 18-year-olds) began to follow these elective courses in March 2004 and, in March 2002, the Seventh National Curriculum extended school discretionary time for students in Year 10. The introduction of elective courses at this level is intended to encourage students' self-directed learning in schools, and to afford extra time for students' independent study and creative activities within school.

Under the Seventh National Curriculum, all *high school* students also continue to study extracurricular activities, comprising student government activities, self-development activities, social service activities, event activities etc.

Schools may allocate more instructional hours (units) to extracurricular activities than those specified in the time allocation standards, and operate the programmes flexibly by integrating or splitting units.

Subject	Grade 10, age 15-16	Grade 11, age 16-17	Grade 12, age 17-18
Moral education	34		
Korean language	136		
Mathematics	136		
Social studies	170 (inc 68 allocated to study of Korean history)		

Science	102		
Physical education	68		
Music	34		
Fine arts	34		
Practical arts (technology and home economics)	102		
Foreign languages (English)	136		
Extra-curricular activities	68	8 units (over Grade 11 and Grade 12)	
Optional courses/school discretionary time	204		
TOTAL MINIMUM INSTRUCTIONAL HOURS (50 minutes in <i>high school</i>) (per annum)	1,224	144 units over Grade 11 and Grade 12	

11. The Netherlands

11.1 Curriculum structure and organisation

There is a national curriculum for primary level education (children aged four to 12 years) and for the first cycle of basic secondary education (12- to 15-year-olds). Thereafter, examination syllabuses govern the requirements of courses leading to the VMBO, HAVO and VWO qualifications examined at the end of the second cycle of upper secondary education (students aged 16, 17 or 18 respectively).

The Ministry of Education determines the overall curriculum and details of compulsory subjects, and these are set out in attainment targets for primary and the first cycle of secondary education. Schools devise their curricular plan and teaching methods based on these statutory national guidelines and targets. The content of teaching and the teaching methods to be used are not prescribed.

Schools are expected to organise their teaching in such a way that all subject matter identified in the attainment targets for primary and lower secondary education has been covered by the end of the respective phase (ages 12 and 15).

The attainment targets define, in broad terms, the core curriculum for primary and lower secondary education. Since August 1993, this set of core objectives has determined the formal content of education at primary and lower secondary level.

58 new attainment targets for primary level education were introduced in the 2005/06 school year and schools had until August 2009 to implement these. These revised attainment targets aim to offer schools the freedom to cater for differences between students and consequently do not contain the same level of detail in all areas of learning. In practice this means, for example, that attainment targets for Dutch or arithmetic are more detailed than those for factual or creative subjects. The attainment targets also cover citizenship, technology and cultural education across broad curriculum areas:

- Dutch language;
- English;
- Frisian language;
- maths and arithmetic;
- exploratory social studies;
- art education;
- physical education.

The 58 attainment targets for lower secondary education specify the standards of knowledge, understanding and skills pupils are required to attain in the lower years of secondary school. Schools are responsible for translating these targets into subjects, projects, or areas of learning (or combinations of all three), or into competence-based teaching, for example. The core objectives are presented under the following headings:

- Dutch;
- English;
- maths and arithmetic;
- man and nature;
- man and society;
- art and culture;
- physical education and sport.

Intermediate targets and teaching guidelines, commissioned by the Ministry of Education, Culture and Science, have been developed for arithmetic/mathematics and Dutch with the aim of providing additional support for schools in their organisation of teaching in these subjects. Intermediate targets provide a starting point for teaching in each year of primary schooling. Teaching guidelines provide a general framework for designing and organising learning and development processes in a given subject area or part thereof in the medium to long term. They include the following elements, presented in relation to each other:

- the goals to be achieved and in what order;
- appropriate subject matter;
- the underlying approach to the subject;
- educational and organisational pointers for achieving these goals.

The attainment targets are available to download:

Primary:

<http://english.minocw.nl/documenten/core%20objectives%20primary%20education.pdf>

Lower secondary:

<http://english.minocw.nl/documenten/core%20objectives%20secondary%20education.pdf>

Dutch Canon

The Ministry of Education, Culture and Science has devised a timeline of Dutch history and culture, known as the Canon, made up of fifty key events. Its purpose is to facilitate learning about the past. The canon fits within existing attainment targets and is intended for the upper classes of primary school and the lower years of secondary school. It comes complete with illustrations and suggestions for use and will be reviewed every five years.

The Canon is available from: <http://www.entoen.nu/en>

Although the attainment targets are determined, individual schools decide how they will meet the attainment targets and, as a result, what is actually taught in school depends on the nature of the school and there is little commonality.

11.2 Curriculum review

Primary education (ages four to 12 years)

The terms of the Primary Education Act were revised on 1 August 2006. As a result, schools have to provide teaching across six curriculum areas and 58 new attainment targets were introduced to primary education. Schools had until August 2009 to implement the new attainment targets.

Upper Secondary Education

With the amendment to the Secondary Education Act of 1 August 2007, more optional elements were introduced in the upper years of HAVO (five-year general secondary education ending at age 17) and VWO (six-year general academic secondary education ending at age 18). The old system is running side by side with the revised curriculum until 2011.

Schools now have greater control over the curriculum at this level. There are fewer compulsory elements and schools are allowed to offer optional specialist subjects as part of the four fixed subject combinations (see the section of Table 21 which covers upper secondary education for further information). Students also have greater freedom to choose subjects, and there is more scope to deepen or broaden knowledge and develop skills.

Attainment targets are reviewed in accordance with a five-year cycle.

11.3 Lower secondary qualifications

The education system in the Netherlands is, essentially, a two-phase system. Primary education runs from age five to age 12, and secondary education from age 12 to age 18. Secondary education is divided into two phases: the first or foundation/basic cycle (students aged 12-15), which is common to all school types, and the second cycle (15 to 16, 17 or 18 depending on the course followed), which prepares students for specific, differentiated terminal examinations. Young people must continue learning until they have obtained a basic qualification, that is, a qualification at ISCED level 3.

At the end of basic secondary education (age 15), schools assess whether students have acquired the knowledge, understanding and skills described in the attainment targets for this period.

The pathways through secondary education include:

- Pre-university education (*Voorbereidend wetenschappelijk onderwijs – VWO*) consisting of gymnasium and athenaeum which last for six years (in total starting at age 12)

- Senior general secondary education (*Hoger algemeen voortgezet onderwijs – HAVO*) which lasts for five years (in total starting at age 12)
- Pre-vocational secondary education (*Vorbereidend middelbaar beroepsonderwijs – VMBO*) which lasts for four years in total starting at age 12.

Students taking the VMBO course undergo a period of formal review at the end of the second year of the four-year course (age 14). At this time they select one of four learning pathways and four sectors for their future study.

The second cycle of secondary education culminates in examinations leading to VMBO, HAVO or VWO qualifications.

Throughout secondary education, students progress annually from one class to the next if, at the end of the year, they have received the mark 'sufficient' (6 out of 10) for the majority of subjects. Students can repeat any given year once; if their marks are still not deemed sufficient at the end of the second year, they must change to a less academically demanding school or section. Conversely, students may transfer to a more academically demanding school or section if their performance warrants this.

In general terms, the qualification obtained at the end of the second cycle (age 16, 17 or 18, dependent on the type of school/course) determines the opportunities open to students on leaving secondary school:

- The VMBO certificate grants access to further vocational education/training (known as secondary vocational education, SBO), or employment
- The HAVO certificate grants access to higher professional education (HBO), access to VWO courses, or employment
- The VWO certificate grants access to university, higher professional education (HBO) or employment

11.4 Curriculum subjects

Table 21 Compulsory and optional subjects in the Netherlands school curriculum for compulsory and post-compulsory education

Compulsory subjects and time allocations	Optional subjects
<p>Primary education, age four/five to 12</p> <p>The attainment targets are divided into chapters for:</p> <ul style="list-style-type: none"> • Dutch language; • English; • Frisian language; • Mathematics and arithmetic; • Exploratory social studies; • Art education; • Physical education. <p>Time allocation</p> <p>Within the framework set by central government, schools are free to decide how much time is spent on the various subjects and areas of the curriculum. In recent years, the <i>competent authority</i>⁹ of a school has been given greater flexibility regarding the length of the school day, so that timetables can reflect the specific needs and wishes of the school and the community.</p> <p>Schools must, however, still provide at least 7,520 hours of teaching over the eight years that children attend primary school; the</p>	<p>Optional subjects are not applicable at this level.</p> <p>The subjects French and German do not fall within the attainment targets, though schools may include them in their curricula. The statutory attainment targets for English provide a model for French and German.</p> <p>In addition, all schools, both public and private, may teach subjects other than those required by law. All public schools must also make arrangements for students to receive religious education or ethical instruction during school time. This instruction may take up a maximum of 120 hours each school year. Children may choose not to receive such religious instruction. In such cases, other study activities are organised.</p>

⁹ For public-sector schools, the competent authority is the municipal authority and, for private-sector schools, it is the administration board, association or institution which established the school. Competent authorities are responsible for the governance of the school, within the statutory framework, in areas, such as management and administration of financial resources, use of school buildings, appointment and dismissal of teaching and non-teaching staff, student admission and expulsion, school hours, preparation of the biennial school plan and annual activity plan (for approval by the Inspectorate), curriculum, timetable (number of lessons per compulsory or optional subject) and choice of teaching materials.

<p>distribution of periods between the first and last four years is flexible. Schools can reduce the number of teaching periods in the last four years to 3,760 hours. The minimum number of hours over the first four years remains unchanged at 3,520. The previous maximum of 5.5 teaching hours each day has been abolished.</p> <p>The Education Inspectorate oversees school timetables and ensures that schools keep to the times stated in their prospectus.</p>	
<p>Lower secondary education (age 12 to 15)</p> <p>The 58 attainment targets (see above) are presented under the following headings:</p> <ul style="list-style-type: none"> • Dutch; • English; • Mathematics and arithmetic; • Man and nature (eight core objectives covering physical, technological and care-related subjects, including living and non-living nature, humans, animals and plants and their relationship to the environment, physical and chemical phenomena, the build and function of the human body, research skills and learning to question, and caring for oneself, others, and the environment); • Man and society (12 core objectives covering asking questions and doing research, placing phenomena in time and space, using sources, the organisation of themes and the ideas of citizenship); • Art and culture; • Physical education and sports. <p>Time allocation</p> <p>It is the responsibility of schools themselves</p>	<p>The 58 attainment targets specify the standards of knowledge, understanding and skills pupils are required to attain in the lower years of secondary school. Schools are responsible for translating these targets into subjects, projects, and/or areas of learning, and/or combinations of all three, or into competence-based teaching, for example. Schools may therefore offer students different options.</p> <p>Optional subjects during lower secondary education include, amongst others:</p> <ul style="list-style-type: none"> • Frisian; • Other modern foreign languages or Esperanto; • Biblical studies, history of Christianity, religious knowledge; • Astronomy; • Philosophy; • Film, theatre, performing arts, history of art; • Health care and care of the home; • Nutrition and clothing.

to group the attainment targets into subjects, projects, or areas of learning and to decide how much time should be spent on each area. The stipulation is that at least two thirds of teaching hours in the lower years of secondary education (1,425 real hours) must be spent on the 58 attainment targets.

Upper secondary (age 15 to 16, 17 or 18)

The choice of upper secondary pathway determines what is taught at this stage.

The teaching hours, in real hours, are as follows:

Years 1 & 2, VMBO, HAVO, VWO	1040
Year 3, HAVO & VWO	1040
Year 3, VMBO	1000
Year 4, HAVO	1000
Years 4 & 5, VWO	1000
Final year, VMBO (year 4)	700
Final year, HAVO (year 5)	700
Final year, VWO (year 6)	700
Practical training (all years)	1000

Schools decide for themselves how these hours should be spread over the school year. There is no prescribed or advisory timetable, and no prescribed minimum for the number of teaching hours in each subject. Physical education is, however, an exception. The subject must be taught in every year, and there are norms as to how the lessons must be spread over the school year.

The Secondary Education Act (WVO) specifies the subjects to be studied by VMBO pupils during the four-year course. At the end of the second year at the earliest pupils opt for a particular sector and learning pathway. Each sector (engineering and technology, care and welfare, business or agriculture) and each learning pathway (the theoretical programme, combined programme, middle-management vocational programme or basic vocational programme) has its own curriculum.

Each subject combination comprises a common component, an optional component, and a sector-specific component. The common component is compulsory for all pupils and comprises Dutch, English, social studies I, physical education and arts I.

HAVO and VWO

In the upper years of HAVO and VWO, teaching is based on study load. The study load system is based on the time required by the average pupil to master a particular quantity of material. The total study load is calculated as 1,600 hours per year (40 weeks of 40 hours), at least 1,000 hours of which should consist of teaching during school time. On 1 August 2007 an amendment to the Secondary Education Act entered into force, introducing more optional elements in the upper years of HAVO and VWO. As of the 2007/2008 school year, all pupils entering the 4th year of HAVO and VWO will be following the revised curriculum.

HAVO

The standard study load for the 4th and 5th years of HAVO combined amounts to:

- 1,480 hours for the common component;
- 1,160 hours for the specialised component;
- 560 hours for the optional component.

The total standard study load for the 4th and 5th years of HAVO combined in the revised curriculum is also divided into three components. The study load for the common component is 1,120 hours. The specialised component is made up of both compulsory and optional subjects which together have a study load of:

- 1,400 to 1,480 hours for science and technology;
- 1,360 to 1,480 hours for science and health;
- 1,360 to 1,480 hours for economics and society;
- 1,360 to 1,520 hours for culture and society.

The study load for the general optional component is 600 hours for science and technology and 640 hours for the other subject combinations.

Finally, pupils also have to write a project (*profielwerkstuk*) that has a study load of 80 hours, bringing the total study load for HAVO to 3,200 hours.

In the revised curriculum for the upper years, the specialised component comprises compulsory specialised subjects and optional specialised subjects. Pupils choose their optional subjects from a range of subjects offered by the school. There are three compulsory specialised subjects and one optional specialised subject in each of the subject combinations 'science and technology', 'science and health' and 'economics and society'. There are two compulsory specialised subjects, one optional specialised cultural subject and one optional specialised social subject in the subject combination 'culture and society'.

Schools are not required to provide a full range of optional specialised subjects and may

even choose to make certain subjects compulsory and not offer any optional subjects.

The general optional component consists of two parts: official exam subjects and a 'free' component of the school's own choosing. The school is responsible for the content and study load of the 'free' component. It may even choose to make certain 'free' subjects compulsory if they reflect the school's profile. While national examination syllabuses are not set for 'free' subjects, a 'free' subject may qualify as an official subject for the HAVO leaving examination if it has a study load of at least 320 hours and has been approved by the Minister of Education, Culture and Science.

VWO

The total standard study load for the 4th, 5th and 6th years of VWO combined in the revised curriculum is also divided into three components. The study load for the common component is 1,920 hours. The specialised component is made up of both compulsory and optional subjects which together have a study load of:

- 1,960 to 2,000 hours for science and technology;
- 1,880 to 2,000 hours for science and health;
- 1,880 to 2,000 hours for economics and society;
- 1,880 to 2,160 hours for culture and society

The study load for the general optional component is 840 hours for science and technology and 920 hours for the other subject combinations.

Finally, pupils also have to write a project (*profielwerkstuk*) that has a study load of 80 hours, bringing the total study load for VWO to 4,800 hours.

12. New Zealand

12.1 Curriculum organisation and review

The revised New Zealand curriculum (introduced between 2007 and 2010) sets out the direction for teaching and learning in New Zealand schools. Based on the Education Act 1989, it is a framework rather than a detailed plan. That is, individual schools are required to base their curriculum on the principles of the nationally defined New Zealand Curriculum, using it as a framework as shown in the figure 1 below.

Figure 1



The New Zealand Curriculum framework aims to provide common direction to schools, regardless of type, size or location, and also aims to give schools the scope, flexibility and authority they need to design and shape their own curriculum so that teaching and learning is meaningful and beneficial to their particular communities of students.

The New Zealand Curriculum includes and explains:

- A vision for young people who are confident, connected, and actively involved lifelong learners;
- The principles that guided the curriculum's development: high expectations, Treaty of Waitangi¹⁰, cultural diversity, inclusion, learning to learn, community engagement, coherence and future focus;
- The values that will be developed and modelled through teaching and learning: excellence; innovation, enquiry, and curiosity; diversity; equity; community and participation; ecological sustainability; integrity and respect;
- The key competencies – the capabilities people need in order to live, learn, work and contribute as active members of their communities. They are: managing self; relating to others; participating and contributing; thinking; and using language, symbols and texts;
- The eight learning areas: social sciences; arts; technology; science; mathematics and statistics; health and physical education; English; and learning languages. The new curriculum explains the rationale and structure of each of these learning areas.

The curriculum covers Years 1 to 13 and covers the same subjects throughout but at different “levels” which progress through the school years. Further information is provided in the following the 'Years and Curriculum Levels' document:

<http://nzcurriculum.tki.org.nz/content/download/1110/11995/file/Charts1.pdf>

In addition, there is a specific pre-compulsory phase (birth to five/six) curriculum framework known as *Te Whariki*.

The curriculum covers the following stages of education:

- Compulsory primary, age 5/6 - 12/13
 - 'Junior Classes' (Years 1 and 2, ages 5-6 and 6-7)
 - 'Standards 1-4' (Years 3 to 6 for children ages 7/8 to 10/11)
- Compulsory lower secondary, age 13 - 16
 - Secondary school Year 7 to 13 (Form 1-5) schools (age 11-18)
 - *composite schools* ('area schools') 5/6-16 years
- Post-compulsory upper secondary, age 16+ - 18+
 - Secondary school Year 11 to 13 (Form 6-7) schools (age 16-18)
 - *composite schools* ('area schools') 16-18 years

¹⁰ The Treaty of Waitangi is New Zealand's founding document:
<http://www.nzhistory.net.nz/politics/treaty/read-the-treaty/english-text>

12.2 Curriculum review

The first outcomes-focused curriculum in New Zealand was introduced from 1992 onwards (on the basis of the Education Act 1989). A review was undertaken in the years 2000-02 with the aim of ensuring that the education system reflected the pace of social change – such as New Zealand’s increasingly diverse population; increased complexity and demands in the workplace; and increased sophistication in technology. On the basis of this review, the revised New Zealand Curriculum Framework was introduced during the period 2007-2010.

The Ministry of Education, in association with the New Zealand Qualifications Authority, is now reviewing all curriculum-related standards so that they are aligned to this revised New Zealand Curriculum. This review also aims to address any issues of duplication between standards and ensure credit parity. As announced by Minister of Education in December 2008, the reviewed standards will be implemented over three years with Level 1 introduced in 2011, Level 2 in 2012, and Level 3 in 2013 (see the 'Years and Curriculum Levels' document referred to above for details of the different levels). There is no standard curriculum review cycle in New Zealand.

12.3 Lower secondary qualifications

Compulsory lower secondary education in New Zealand ends at age 16.

The National Certificate of Educational Achievement (*NCEA*) is the main qualification at all levels of the senior secondary school. Its purpose is to provide opportunities for the diverse range of students in the increasingly wide variety of courses in schools to have their achievements recognised and reported. Consequently, students can achieve the *NCEA* from a wide range of studies, within and beyond the school curriculum. Unit and achievement standards are used for assessment of courses developed by education, industry and national standards bodies. For each school curriculum subject, there is both external assessment and externally moderated, internal assessment, using achievement standards. Achievement standards are in place for general/academic (school curriculum) subjects, such as maths, geography and science, and unit standards have been developed for assessment in vocational/technical subjects (e.g. automotive engineering, dairy manufacturing).

The *NCEA* is a qualification on New Zealand's National Qualifications Framework (*NQF*); it sits alongside 700 other national qualifications used throughout tertiary education and industry training.

Students completing Year 11 – the final year of compulsory education, aged 15/16, obtain (National Qualifications Framework) credits towards the *NCEA*.

A student's achievement of the standards required to obtain credit towards the *NCEA* is measured by an appropriate mix of external and moderated internal assessment. At least half of the credits for each subject are assessed externally. External assessment includes written examinations and other assessment such as portfolios of students' work.

The *NCEA* is available at four levels of the National Qualifications Framework. It is intended that Year 11 students (aged 15-16) should be aiming at *NCEA* level 1.

Examinations and assessments for the purpose of awarding secondary school qualifications are the responsibility of the New Zealand Qualifications Authority (*NZQA*). Standards for these examinations and assessments are based on the learning outcomes of the national curriculum statements.

A minimum number of credits is required, from examinations and internal assessments, for students to achieve the award level for a National Certificate at any level. Students can accumulate credit towards their certificate over a number of years. They do not, for example, have to achieve all the credits for a level 1 certificate while in Year 11 (the final year of compulsory secondary education, aged 15-16), although it is expected that reasonably able students should be able to do so.

There is no examination or assessment requirement to enable students to pass to the next phase. Students can go on to complete two more levels of the *NCEA*.

The National Certificate of Educational Achievement (*NCEA*), is intended to provide a comprehensive record of what students achieve while they are at school, and to provide a 'launching pad' for students' ongoing learning and their future careers. It is standards-based and complements external assessment with internal assessment in all conventional school subjects at three levels (Level 1 *NCEA*, Level 2 *NCEA*, and Level 3 *NCEA*, broadly equivalent to Year 11, Year 12 and Year 13). However, it is not time-bound and students may choose to study each subject at the level that best meets their needs. National standards, in each area of learning, have four performance grades: no credit, achieved with credit, achieved with merit, and achieved with excellence, of which the last three qualify for the award of *NCEA* credits. When 80 national standard credits have been accumulated, the student is awarded the *NCEA*. At least 60 of the credits must be at, or above, the level of the qualification awarded (that is, Level 1, Level 2 or Level 3). *NCEA* level results are recognised by post-compulsory institutions and employers.

12.4 Curriculum subjects

Table 22 Compulsory and optional subjects in the New Zealand school curriculum for pre-compulsory, compulsory and post-compulsory phases of education

Compulsory subjects and time allocations	Optional subjects
<p>First phase: Pre-compulsory, age 0 - 5/6 <i>Te Whariki</i>: the curriculum framework for early childhood education aims to provide children with a foundation for ongoing learning. It covers children from birth until they go to school, which can be at five years of age, but is compulsory at six. (The majority of five-year-olds are in primary level education.)</p> <p><i>Te Whariki</i> is based on four principles: empowerment, holistic development, family and community, and relationships. It includes five curriculum strands:</p> <ul style="list-style-type: none"> • Exploration – <i>Mana Aoturoa</i>; • Communication – <i>Mana Reo</i>; • Wellbeing – <i>Mana Atua</i>; • Contribution – <i>Mana Tangata</i>; • Belonging – <i>Mana Whenua</i>. <p>Together, these five strands aim to provide a foundation for lifelong learning.</p>	<p>Optional/elective subjects are not applicable during this phase of education in New Zealand.</p>

Compulsory primary, age 5/6 - 12/13

Coverage of eight learning areas and five key competencies is compulsory during the ten years of statutory primary and lower secondary education (ages 5/6 to 16). This is to ensure a broad and balanced education.

The **learning areas** are:

- English
Strands: making meaning of ideas or information received (listening, reading, and viewing) and creating meaning for themselves or others
Speaking, writing, and presenting
- The arts
Strands: dance, drama, music, visual arts
- Health and physical education
Strands: mental health, sexuality education, food and nutrition, body care and physical safety, physical activity, sport studies, and outdoor education
- Learning languages
Strands: communication, language knowledge, cultural knowledge
- Mathematics and statistics
Strands: number and algebra, geometry and measurement, and statistics
- Science
Strands: nature of science, living world, planet earth and beyond, physical world, material world
- Social sciences
Strands: identity, culture, organisation, continuity and change; economic world

None of the strands in the required learning areas is optional but, in some learning areas, particular strands may be emphasised at different times or in different years, for example, under science, “nature of science” is compulsory up to Year 10, whereas other strands (e.g. “living world”) are not.

Schools are expected to have a clear rationale for doing this and to ensure that each strand receives due emphasis over the longer term.

In addition, schools may also offer optional/ elective subjects.

By law, Maori language has to be provided to students/ parents who request it. Demand may therefore mean that this subject is offered from Year 1 (age five-six).

<ul style="list-style-type: none"> • Technology <p>Strands: technological practice, technological knowledge, and nature of technology</p> <p>The key competencies are:</p> <ul style="list-style-type: none"> • Thinking; • Using language, symbols, and texts; • Managing self; • Relating to each other; • Participating and contributing. 	
<p>Compulsory lower secondary, age 13 - 16</p> <p>Coverage of eight learning areas and five key competencies is compulsory during the ten years of statutory primary and lower secondary education. This is to ensure a broad and balanced education. See above.</p>	<p>See above</p>
<p>Post-compulsory upper secondary, age 16+ - 18+</p> <p>The continuation of a balanced curriculum experience in the post-compulsory upper secondary senior school is intended to provide all students with life skills and with equal access to a wide range of education and employment opportunities.</p> <p>Schools are required to ensure that students in Years 11, 12 and 13 (ages 15/16 - 17/18) maintain a balanced curriculum, building on the broad and balanced education of their earlier years, whilst recognising the diverse educational and training needs of students at these levels. Schools should therefore provide students at this level with the opportunity to continue studies in each of the seven essential learning areas:</p>	<p>Since the introduction of the National Qualifications Framework and the National Certificate of Educational Achievement (NCEA), the subject options available to students from Year 11 (age 15/16) have been determined by the wide range of NCEA subjects/courses offered by a range of providers - both within the school setting and in external settings. (There is, however, usually less choice in small schools, often located in rural areas.)</p>

- language and languages;
- mathematics;
- science;
- technology;
- social sciences;
- the arts;
- health and physical well-being.

All students should also continue to develop the full range of (eight) essential skills (communication skills; numeracy skills; information skills; problem-solving skills; self-management and competitive skills; social and cooperative skills; physical skills; and work and study skills).

Although the national curriculum statements cover Years 1-13 of schooling in New Zealand (students aged 5/6 - 17/18), these are not mandatory for students in senior secondary education, Years 11, 12 and 13.

The New Zealand Curriculum Framework (NZCF) guidelines recommend that, in Year 11 (Form 5, age 15/16+) students should be offered a wide choice of courses, but should be required to undertake study in a minimum of six subjects, three of which should be English or Maori, mathematics, and a science subject. This is, however, not a mandatory requirement. Students in Years 12 and 13 (ages 16 to 18) should be able to make informed personal choices from a wide range of courses, which lead to further study or to work and training opportunities. They should also be able to undertake studies in greater depth.

13. Singapore

13.1 Curriculum structure and organisation

There is a statutory national curriculum in Singapore which is intended to provide each child with a broad-based education. The curriculum sets out the goals of educational policy in terms of the range of core and optional (elective) subjects that are taught across schools. For each subject, the subject syllabus outlines in detail the rationale and specific objectives for teaching the subject at the primary, secondary and post-secondary levels. These are accompanied by the curriculum framework in which the lists of content topics are integrated across each Grade/Year level. In addition, guidelines and suggestions on the methods of teaching are highlighted, together with a clear statement of the intended standards of achievement. The syllabus then concludes with a suggested list of texts and available instructional resources.

The Ministry of Education (MOE) subject syllabuses are available at:

<http://www.moe.gov.sg/education/syllabuses/>

There is a pre-school education curriculum framework for children aged four to six years.

The document 'Nurturing Early Learners: a Framework for a Kindergarten Curriculum In Singapore', available at: <http://www.moe.gov.sg/education/preschool/files/kindergarten-curriculum-framework.pdf>

Diagrammatic overviews of the curriculum are available as follows:

- primary school curriculum (for children aged six to 12 years):
<http://www.moe.gov.sg/education/primary/curriculum/>
- (lower) secondary school curriculum (for children aged 12 to 16 years):
 - normal (academic)/normal (technical):
<http://www.moe.gov.sg/education/secondary/normal/>
 - special/express: <http://www.moe.gov.sg/education/secondary/express/>
- pre-university curriculum (for *students aged 16 to 18 years*):
<http://www.moe.gov.sg/education/pre-u/curriculum/>

In addition, a table of desired outcomes at each stage of education is also available online at: <http://www.moe.gov.sg/education/desired-outcomes/>

The primary school curriculum consists of a four-year foundation stage from Primary 1 to Primary 4 (ages six to 10) and a two-year orientation stage from Primary 5 to 6 (ages 10 to 12).

The (lower) secondary curriculum applies to children aged 12 to 16 years. Students are placed in a special, express, normal (academic) or normal (technical) course according to how they perform at the Primary School Leaving Examination (PSLE) at age 12.

The pre-university/post-secondary curriculum applies to students aged 16 to 18 years and is largely defined by external examination syllabuses.

The Ministry of Education (*MOE*) provides the curriculum guidelines for pre-schools to plan and design their own programmes to cater to the needs of the children in their charge. They are not prescriptive.

The curriculum is statutory for primary and secondary education. It is determined by the national Ministry of Education.

13.2 Curriculum review

Curriculum development is undertaken by the Curriculum Planning and Development Division (CPDD) in the Ministry of Education (MOE). Its mission is to develop a curriculum to meet the needs of the nation, the community and the individual. It is responsible for:

- designing and reviewing syllabuses and monitoring their implementation;
- promoting teaching and learning approaches that are in line with curriculum intent;
- designing assessment modes that support the desired learning outcomes;
- producing and approving instructional materials;
- designing special curriculum programmes;
- providing support by training school personnel in syllabus implementation;
- providing specialist advice to other divisions, ministries and private publishers on matters related to the curriculum.

The primary curriculum was last reviewed in 2008-2009, and the secondary curriculum in 2010.

The pre-school curriculum framework (guidelines for providers) was introduced in January 2003. It is based on the 'Desired Outcomes for Pre-school Education' which aim to guide early years teaching in Singapore by encouraging learning processes aimed at an all-round holistic development of the child.

The statutory curriculum for (lower) secondary education has recently been reviewed and the Secondary Education Review and Implementation (SERI) Committee released its full report in December 2010. Key recommendations include:

- measures to strengthen teacher-student relationships, with greater support for students' wellbeing and the provision of careers guidance;
- developing a toolkit for the implementation of character and citizenship education (CCE), drawing on current best practices in schools;
- strengthening core skills in English and mathematics through improved teaching materials, and the deployment of *allied educators* [support staff] to aid progression to post-secondary education.

The Ministry of Education must now decide whether or not to implement these recommendations.

Further information is available at:

<http://www.moe.gov.sg/media/press/2010/12/strengthening-social-emotional-support-secondary-school-students.php>

With regard to primary level education, in April 2009, the Ministry of Education (MOE) accepted the recommendations of the Primary Education Review and Implementation (PERI) Committee, which proposed a wide range of changes to ensure that young people are equipped not only with content knowledge, but also with the necessary skills and values to thrive in a fast-changing and globalised future. These changes include:

- Balancing knowledge with skills and values by using engaging pedagogy to teach skills and values;
- Emphasising non-academic programmes within the curriculum by, for example, implementing a Programme for Active Learning (PAL) for all Primary 1 and 2 pupils (aged six/seven to eight/nine) in sports and outdoor education and performing and visual arts, and encouraging all Primary 3 to 6 pupils (ages eight to 12) to continue with PAL and/or similar activities;
- Offering more holistic assessment to support learning by, for example, encouraging schools to move away from an overly strong emphasis on examinations in Primary 1 and 2 and to explore the use of bite-sized forms of assessment to help build pupils' confidence and desire to learn.

Further information is available at: <http://www.primaryeducation.sg/about-peri/summary-of-peri-committee-recommendations/>

Other recent changes to the primary level curriculum have included:

- The introduction of subject-based 'banding' (SBB), which offers children in Primary 5 (aged 10+) a mixture of standard or foundation level subjects depending on their aptitude in each subject. For example, a student who struggles in English and maths can

choose to take these subjects at foundation level, while taking other subjects such as mother tongue language or science at standard level. For further information, see <http://www.moe.gov.sg/education/primary/files/subject-based-banding.pdf>

- The introduction of a more engaging mother tongue language curriculum (Chinese, Malay and Tamil languages) with increased differentiated teaching and a system that is geared to reward students when they attain specific levels of attainment. For further information, see: <http://www.moe.gov.sg/media/press/2011/01/enhancing-the-teaching-and-testing-of-mtl.php>

Framework to promote the development of '21st century competencies'

In March 2010, the Ministry of Education published a new framework to help students develop the competencies necessary for life in the 21st century. They include social and emotional skills, global awareness, critical thinking and communication. Cross-curricular learning outcomes for these competencies will be defined in the next curriculum review cycle (2012 to 2014). From 2012, all students will be provided with an individual Holistic Development Profile, which will record their progress in developing the competencies. For further information, see: <http://www.moe.gov.sg/media/press/2010/03/moe-to-enhance-learning-of-21s.php>

Increase in PE Curriculum Time

Linked to the above framework to promote the development of 21st century competencies, it is intended to increase the time allocated to PE in the curriculum by half an hour per week for pupils in Years 1 and 2 (ages six to eight) and by an hour per week for pupils in Years 3 to 10 (ages eight to 16), that is:

Table 23 Time allocation for PE in Singapore curriculum

Level	PE Curriculum Time
Primary 1 – Primary 2	1.5h → 2h
Primary 3 – Primary 6	1.5h → 2.5h
Secondary 1 – Secondary 4	1h → 2h

The Ministry of Education undertakes systematic curriculum review as part of a long-term process to ensure that the curriculum is forward-looking, remains relevant in the context of Singapore's economy, and meets the needs, abilities and interests of students.

The curriculum planning and review process has been reduced from an eight- to 10-year cycle to a six-year cycle incorporating a mid-term review at the end of the third year. It involves a detailed study of the subject syllabuses, teaching approaches and the modes of assessment to align these with national policies and emerging trends.

The next curriculum review cycle will take place between 2012 and 2014.

13.3 Lower secondary qualifications

Lower secondary education (known as 'secondary') ends at age 16/17.

The Singapore (Cambridge International) GCE 'N' Level and GCE 'O' Level examinations are national examinations which measure student attainment on completion of lower secondary education.

Students with good GCE 'O' Level passes are normally admitted to *junior colleges*, where they complete the Singapore (Cambridge International) GCE 'A' Level in two years, or to centralised institutes to complete the 'A' Level in three years. Both GCE 'O' Level and GCE 'A' Level students can apply for entry to polytechnics. Students who have completed their GCE 'N' Level or GCE 'O' Level examinations may also apply for various technical or business study courses.

Students who have completed secondary school education and taken the GCE 'N' Level or GCE 'O' Level examinations, but who do not qualify for the next higher level examination, usually seek employment.

Pre-university education (age 16/17+) prepares students for the GCE 'A' Level examination at the end of the two-year *junior college* or three-year centralised institute course. Students who complete their pre-university education also receive a School Graduation Certificate, which includes a description of each student's academic and non-academic achievements and personal qualities.

13.4 Curriculum subjects

Table 24 Compulsory and optional subjects in the Singapore school curriculum for pre-compulsory and compulsory phases of education

Compulsory subjects and time allocations	Optional subjects
<p><i>Kindergarten (three-year pre-compulsory school which caters for children from ages four to six)</i></p> <p>The desired outcomes for pre-school education focus on values, attitudes and skills, but make no mention of specific competencies in reading, writing and arithmetic. This is deliberate, with a view to preparing children for lifelong learning, rather than for entry to primary education. The pre-school education curriculum framework, focuses on six key principles:</p> <ul style="list-style-type: none"> • a holistic approach to development and learning; • integrative learning; • children as active learners; • adults as interested supporters in learning; • interactive learning; • play as a medium for learning. <p>The curriculum framework also identifies six key areas of learning experience in order to fulfil the aim of the all-round development of the child:</p> <ul style="list-style-type: none"> • aesthetics and creative expression; • environmental awareness; • language and literacy; • motor skills development; • numeracy; • self and social awareness. <p>Children learn in two languages, English as the first language and Chinese, Malay or Tamil as a Mother Tongue language.</p> <p>Kindergartens (pre-schools) function daily, five days a week, with schooling hours ranging from three to four hours each day.</p>	<p>N/A</p>

The foundation stage (Primary 1 to Primary 4 which caters for children aged six to 10)

The primary curriculum is organised in three concentric circles:

- The inner circle focuses on **life skills**, aimed at ensuring that students acquire sound values and skills to take them through life as responsible adults and active citizens;
- The central circle comprises **knowledge skills** aimed at developing students' thinking, process and communication;
- The outermost circle covers **content-based subject disciplines**.

The *foundation stage* (Primary 1 to Primary 4) focuses on a core curriculum which includes English language (includes health education and information literacy), mother tongue (Chinese, Malay or Tamil), mathematics, art and crafts, music, social studies, civics and moral education (CME), and physical education. Science is introduced in Primary 3 (students aged eight to nine years).

Time allocation

NB The information below was provided to NFER by an official in the Ministry of Education.

Subjects	No. of 30-minute lessons per week			
	Primary 1	Primary 2	Primary 3	Primary 4
English, including health education and information literacy	17	17	15	13
Chinese/Malay/Tamil including Civics and Moral Education (CME)	15	13	12	11
Mathematics	7	9	11	11

Co-curricular activities

There are no optional subjects as such in primary level education in Singapore. However, co-curricular activities (CCAs) are offered to students in Primary 4, 5 and 6 (ages nine to 12). Participation in CCAs is voluntary and students choose from a variety of sports and games such as track and field, basketball, tennis or uniformed organisations such as the Red Cross Society or the National Police Cadet Corps. Alternatively, they can opt for a cultural activity such as a military band, ethnic dance group or drama club, or a community-based activity.

Science	-	-	3	4
Social studies	1	1*	1**	2
Art and crafts	2	2	2	2
Music	2	2	2	2
Physical education***	3	3	3	3
Assembly	1	1	1	1
TOTAL	48	48	49	49

* Began in 2001.

** Began in 2002. The time is taken from either English language or mother tongue lessons.

***As mentioned above, it is currently proposed to increase the time allocation for PE.

The orientation stage (Primary 5 to Primary 6 which caters for children aged 10 to 12)

In Primary 5 and Primary 6 (the orientation stage), the subjects studied are: English; mother tongue (Chinese, Malay or Tamil); mathematics; science; social studies; art and crafts; music; physical education (PE), and Civics and Moral Education (CME).

Time allocation

Following the introduction of subject-based banding (*SBB*) (see section 13.2 above)), the curriculum time allocation for Primary 5 and Primary 6 is as shown below. Each period lasts 30 minutes. The number of periods for each subject is provided as a guideline. Schools may vary the number of periods for each subject slightly, according to the needs of their students.

Subjects	No. of periods per week	
	Standard level subjects	Foundation level subjects
Examinable Subjects		
English Language	12-13	16
Malay/Chinese/Tamil*	8-10**	4

Co-curricular activities

There are no optional subjects as such in primary level education in Singapore. However, co-curricular activities (CCAs) are offered to students in Primary 4, 5 and 6 (ages nine to 12).

Mathematics	9-10	13	
Science	5	3	
Non-examinable Subjects			
Civics & Moral Education		3	
Social Studies		3	
Art & Crafts		2	
Music		1	
Project Work		***	
Physical Education		2	
Health Education		1	
Assembly ****		1	
Total		49	
<p>* Students may study either English language and higher Malay/higher Chinese/higher Tamil, or English language and Malay/Chinese/Tamil. Students who opt for higher Malay, Chinese or Tamil may do so at the end of Primary 4.</p> <p>** An additional time of 2 periods may be required outside formal curriculum hours for the teaching of higher Malay/higher Chinese/higher Tamil.</p> <p>*** Project Work should be implemented in at least one level. The recommended levels of implementation are Primary 3, Primary 4 and/or Primary 5. It is recommended that 20-25 hours is allocated for one project per year for students to acquire the key processes in Project Work, and that teachers monitor students' learning progress.</p> <p>**** A weekly whole school assembly, normally conducted by the <i>principal</i>, includes a talk on an important school or national issue.</p>			
<p>Secondary education (ages 12 to 16/17)</p> <p>Although students in secondary level education are on differentiated courses ('special', 'express' or 'normal'), the core curriculum is essentially the same and includes:</p> <ul style="list-style-type: none"> • English; • Chinese/Malay/Tamil; • maths; • science; • literature; 			

<ul style="list-style-type: none"> • history; • geography; • art; • design and technology and home economics; • civic and moral education; • PE; • music. <p>From the age of 14, curriculum subjects are closely linked with the examinations the individual student is taking. In all courses however, English, maths, Chinese/Malay/Tamil, civic and moral education, PE and music remain compulsory.</p> <p>Special And Express Courses: Four-year courses leading to the GCE 'O' Level examination. Special course students offer Mother Tongue at a higher level (Higher Chinese/Higher Malay/Higher Tamil).</p> <p>Normal Course: Students in the Normal course follow either the Normal (Academic) [N(A)] or Normal (Technical) [N(T)] curriculum.</p> <ul style="list-style-type: none"> • 4-year programme leading to the GCE 'N' Level examination. • A 5th year leading to the GCE 'O' Level examination is available to N(A) students who perform well in their GCE 'N' Levels. <p>Students can move from one course to another based on their performance and the assessment of their Principal and teachers.</p> <p>Further information on compulsory subjects for the various, differentiated courses, by age range, is provided below.</p>	<p>parents in consultation with the school.</p> <p>Students on Special and Express courses and Normal courses must choose between two and four subjects from</p> <ul style="list-style-type: none"> • second mathematics (e.g. additional mathematics); • humanities (literature; geography; history); • sciences (biology or human and social biology; physics; chemistry; science/ • integrated science); • third language (French, Japanese, German or Malay language elective); • others (art and crafts; music; fashion and fabrics; food and nutrition; commerce; principles of accounts; design and technology; religious knowledge).
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Secondary 1 and 2 (12- to 14-year-olds)**Normal (Academic) Curriculum**

N/A

	Special and Express	Normal Academic
Examination Subjects: 34 lessons (35-40 minutes) per week		
English	6	6
Chinese/Malay/Tamil	6	6
Mathematics	5	6
Science	6	5
Literature	2	2
History	2	2
Geography	2	2
Art & Crafts	2	2
Design & Technology and Home Economics	3	3
Non-Examination Subjects: 6 lessons (35-40 minutes) per week		
Civics and Moral Education	2	2
Physical Education*	2	2
Music	1	1
Assembly	1	1

*Linked to the new framework to promote the development of 21st century competencies (March 2010) it is intended that the time allocation for PE will increase by

half an hour per week for pupils aged eight to 16.

Secondary 1 and 2 (12- to 14-year-olds)

Normal (Technical) Curriculum

Examination Subjects: 31 lessons (35-40 minutes) per week	
English	8
Basic Chinese/Malay/Tamil	3
Mathematics	8
Computer Applications	4
Science	4
Technical Studies and Home Economics	4
Non-Examination Subjects: 6 lessons (35-40 minutes) per week	
Civics and Moral Education	2
Physical Education* (*see above)	2
Art and Crafts	1
Assembly	1

N/A

Secondary 3 and 4 (14- to 16-year-olds)

Special/Express Curriculum

The compulsory/core examination subjects at this phase are English language, Chinese/Malay/Tamil (*Special* course students Higher C/M/T), mathematics, a humanities subject and a science subject. These subjects are taught in 24 to 26, 35 to 40 minutes length lessons each week.

There are also compulsory non-examination subjects:

Compulsory Non-Examination Subjects: 6 lessons (35-40 minutes) per week	
Civics and Moral Education	2

Students on Secondary 3 and 4 'Special' and 'Express' courses must choose between two and four subjects from: second mathematics (e.g. additional mathematics); humanities (literature; geography; history); sciences (biology or human and social biology; physics; chemistry; science/integrated science); third language

Physical Education	2	(French, Japanese, German or Malay language elective); others (art and crafts; music; fashion and fabrics; food and nutrition; commerce; principles of accounts; design and technology; religious knowledge e.g. Bible knowledge, Hindu studies, Sikh studies etc.). These elective subjects require a total of eight to ten lessons each week.
Music	1	
Assembly	1	
Optional/elective subjects: 8-10 lessons (35-40 minutes) per week	See column to right	
Secondary 3 and 5 (14- to 17-year-olds) <i>Normal (Academic) Curriculum</i>		Students on Secondary 3-5 'Normal Academic' courses must choose between two and four subjects from: humanities (literature; geography; history); sciences (human and social biology; physics and chemistry; physics and biology; chemistry and biology); and others (art and crafts; fashion and fabrics; food and nutrition; elements of office administration; principles of accounts; design and technology; religious knowledge option, e.g. Bible knowledge, Hindu studies, Sikh studies etc.). These elective subjects require a total of three to
Compulsory/Core Examination Subjects: 20 lessons (35-40 minutes) per week		
English Language	8	
Chinese/Malay/Tamil	6	
Mathematics	6	
Compulsory Non-Examination Subjects: 6 lessons (35-40 minutes) per week		
Civics and Moral Education	2	
Physical Education	2	
Music	1	
Assembly	1	

	eight lessons each week.																				
<p>Secondary 3 and 4 (14- to 16-year-olds) Normal (Technical) Curriculum</p> <table border="1" data-bbox="196 360 933 1274"> <tr> <td data-bbox="196 360 660 562">Compulsory/Core Examination Subjects: 25 lessons (35-40 minutes) per week</td> <td data-bbox="663 360 933 562"></td> </tr> <tr> <td data-bbox="196 566 660 622">English</td> <td data-bbox="663 566 933 622">9</td> </tr> <tr> <td data-bbox="196 627 660 683">Basic Chinese/Malay/Tamil</td> <td data-bbox="663 627 933 683">3</td> </tr> <tr> <td data-bbox="196 687 660 743">Mathematics</td> <td data-bbox="663 687 933 743">9</td> </tr> <tr> <td data-bbox="196 748 660 804">Computer Applications</td> <td data-bbox="663 748 933 804">4</td> </tr> <tr> <td data-bbox="196 808 660 1010">Compulsory Non-Examination Subjects: 6 lessons (35-40 minutes) per week</td> <td data-bbox="663 808 933 1010"></td> </tr> <tr> <td data-bbox="196 1014 660 1070">Civics and Moral Education</td> <td data-bbox="663 1014 933 1070">2</td> </tr> <tr> <td data-bbox="196 1075 660 1131">Physical Education</td> <td data-bbox="663 1075 933 1131">2</td> </tr> <tr> <td data-bbox="196 1135 660 1191">Music</td> <td data-bbox="663 1135 933 1191">1</td> </tr> <tr> <td data-bbox="196 1196 660 1274">Assembly</td> <td data-bbox="663 1196 933 1274">1</td> </tr> </table>	Compulsory/Core Examination Subjects: 25 lessons (35-40 minutes) per week		English	9	Basic Chinese/Malay/Tamil	3	Mathematics	9	Computer Applications	4	Compulsory Non-Examination Subjects: 6 lessons (35-40 minutes) per week		Civics and Moral Education	2	Physical Education	2	Music	1	Assembly	1	<p>Students in Secondary 3 and 4 of 'Normal Technical' courses must choose between one and three subjects from: technical studies; science; food and nutrition; fashion and fabrics; elements of office administration; and art and crafts.</p> <p>These elective subjects require a total of three to nine lessons each week.</p>
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Music	1																				
Assembly	1																				
<p><i>Pre-university/post-secondary curriculum in junior colleges (students aged 16 to 18+ years)</i></p> <p>The choice of upper secondary qualification determines what is taught at this stage.</p>																					

14. USA

There is no national curriculum or curriculum framework in the USA. The intended curricula are determined at the school district level in accordance with individual state guidelines.

There is, however, a current commitment on the part of the Governors and the State Commission of Education from 48 states, two territories and the District of Columbia to develop a common core of state standards in English language arts and maths for grades Kindergarten to Grade/ Year 12 (students aged five to 18 years). This **Common Core State Standards Initiative (CCSSI)** is a state-led effort coordinated by the National Governors Association Centre for Best Practices (NGA Centre) and the Council of Chief State School Officers (CCSSO).

Further information is available from: <http://www.corestandards.org/>

15. USA – Massachusetts

15.1 Curriculum organisation and structure

Since the enactment of the (Massachusetts) Education Reform Act of 1993 state-wide curriculum frameworks across seven subject areas have been developed for pre-kindergarten to Grade/Year 12 education (aged 5 to 18 years) in Massachusetts. The seven subject areas are:

- mathematics;
- science and technology;
- social science/social studies (includes US and world history, geography, economics, civics and government);
- English language arts;
- world languages;
- the arts (includes dance, music, theatre and the visual arts); and
- health (includes health education, physical education and family and consumer science education).

It is recommended that the teaching of a foreign language be introduced in elementary school for children aged six and over.

Local communities use these state-wide frameworks to develop more specific, locally-adapted curricula. The Massachusetts Department of Education bases the state-wide student assessment programme on the curriculum frameworks.

Massachusetts is one of the States which has chosen to adopt the Common Core State Standards (see above). In late December 2010, a new *Massachusetts Curriculum Framework for English Language Arts and Literacy*, and a new Curriculum Framework for Mathematics were approved; both are based on the Common Core State Standards. They are available to download: <http://www.doe.mass.edu/candi/commoncore/>

The most recent versions of the other subject area curriculum frameworks for the state of Massachusetts are also available online:

<http://www.doe.mass.edu/frameworks/current.html>

All seven curriculum frameworks are intended to provide:

- guides for creating a detailed curriculum;
- guides for classroom assessment;
- guides for selecting instructional materials;

- guides for planning professional development;
- guides for restructuring schools to support learning;
- a presentation of critical issues that underlie learning, teaching and assessment; and
- support for teachers to try innovations and investigations that lead to high quality learning experiences for all students.

However, they are *not* intended to provide:

- detailed lesson plans or curriculum;
- items on which all students must be tested;
- directives for uniform programmes or texts; or
- mandates for specific methodologies or programmes.

Content standards are developed for each of the seven curriculum frameworks. Each content standard has four components:

- core concepts: these are 'organisers' or 'big ideas' which have been designed to help teachers and students conceptualise learning in the discipline;
- strands: these describe the broad areas of knowledge and skills that students encounter pre-kindergarten through to Grade/Year 12 as they study the core concepts of a discipline/subject area;
- learning standards: these articulate the specific content that students study and the skills through which students practice the strands in developmentally appropriate ways. These are presented in Grade level/Year level clusters: Pre-kindergarten to Grade 4 (for children under 5 to age 10), Grades 5-8 (aged 10 to 14), Grades 9 and 10 (age 14 to 16); and Grades 11 and 12 (age 16 to 18);
- examples of student learning: these classroom ideas help teachers identify how the curriculum can be structured for students to demonstrate increasing mastery of content and skills at the Grade level clusters.

The Massachusetts curriculum frameworks for pre-kindergarten to Grade 12 education also establish three broad goals that are critical to lifelong learning and that frame the learning, teaching and assessment process. These are:

- thinking and communicating: ways of making sense or meaning of the world and our experiences to ourselves and to others. Thinking includes being able to internalise new ideas and connect them to familiar concepts and prior knowledge. Communicating means putting learning into the language of speech or writing and requires reflection in such forms as examination, clarification, analysis and synthesis;

- gaining and applying knowledge: involves pursuing ideas and experiences and applying new knowledge in real life contexts. This pursuit is interactive by nature. The more experiential it is, the more powerful the learning;
- working and contributing: imply that student work is meaningful and purposeful and that the process and products of student work are valued contributions to the school and community. Embedded in powerful learning experiences are notions of persistence, self-discipline, hard work and effort and pride in producing quality work.

MassCore

The Massachusetts High School Programme of Studies (MassCore) is intended to ensure that the state's high school graduates arrive at college or the workplace well prepared and so reduce the number of students taking remedial courses in college. MassCore recommends a comprehensive set of subject area courses and units as well as other learning opportunities to complete before graduating from high school.

MassCore is not a state graduation requirement; it is a recommended programme of studies of 22 high school units. For the purposes of MassCore, a credit or unit is the equivalent of a one-year course based on the appropriate grade level standards in the Massachusetts Curriculum Frameworks.

While all districts have established local graduation requirements, the number of core courses and total units required to earn a high school diploma varies widely throughout the state. For example, some districts require that students earn four units of maths while others require three units; some only two. Further, some districts require students to earn the equivalent of 16 units to graduate while others require 22 or more. MassCore establishes a common set of coursework expectations for all districts.

Further information is available <http://www.doe.mass.edu/hsreform/masscore/>

State-wide curriculum frameworks across seven subject areas have been developed for pre-kindergarten to Grade 12 education (children age five to age 18). Individual school districts and schools use the curriculum frameworks to create their own curricula.

15.2 Curriculum review

The curriculum frameworks were originally introduced by the Massachusetts Education Reform Act of 1993.

Each curriculum framework is always considered to be work in progress and, consequently, is subject to continual refinement and development. The frameworks are also continually reviewed to ensure that they remain current.

Work is on-going to change the English and mathematics curricula in the light of the decision to adopt the Common Core Standards; see above.

15.3 Lower secondary qualifications

Public schooling begins with a *kindergarten* year, prior to compulsory education starting in Grade 1 (or first Grade) and continuing through to around Grade 12. Most students enrol in *kindergarten* at around age five and the typical age for Grade 12 graduation is 18. In Massachusetts, attendance is mandatory between the ages of six and 16 (Grades 1 to 10).

No qualification is awarded at the end of compulsory phase education (16) in Massachusetts.

However, one of the requirements for a high school graduation diploma – received on completion of Grade 12, at around age 18, is that students pass the MCAS¹¹ Grade 10 tests in English and mathematics. In addition, since 2010, those taking the MCAS tests in Grade 10 have also had to pass a science and technology test as a requirement for the high school graduation diploma. These tests are known as the 'competency determination', and is intended to demonstrate whether students have mastered a common core of skills, competencies and knowledge in the areas of mathematics, science and technology, and English.

Due to financial constraints, the introduction of an equivalent history and social science tests has been postponed.

Students must also meet other local graduation requirements.

The high school diploma - awarded on completion of high school - is considered to be the minimum educational requirement for government jobs and higher education in the US. Access to higher education depends on more than completing high school however. Entrance is, for example, usually dependent on a student's high school record; courses taken in high school; marks received; recommendations from high school teachers; successful completion of the high school curriculum; and college/higher education admissions tests such as the SAT (<http://sat.collegeboard.com/about-tests>) or ACT tests (<http://www.act.org/aap/>).

¹¹ The **Massachusetts Comprehensive Assessment System** commonly called **MCAS** is a standards-based assessment programme, developed in response to the Massachusetts Education Reform Act 1993. State and federal law mandates that all students who are enrolled in the tested grades and who are educated with Massachusetts public funds participate in MCAS testing.

15.4 Curriculum subjects

Table 25 Compulsory and optional subjects in the Massachusetts school curriculum

Compulsory subjects and time allocations	Optional subjects
<p>Pre-kindergarten to Grade 12 (high school) (age five to 18)</p> <p>Curriculum frameworks cover the following seven subject areas:</p> <ul style="list-style-type: none"> • mathematics; • science and technology; • social science/social studies (includes US and world history, geography, economics, civics and government); • English language arts; • world languages; • the arts (includes dance, music, theatre and the visual arts); • health (includes health education, physical education and family and consumer science education). 	<p>Whilst the Education Reform Act of 1993 specifies the seven core (compulsory) subject areas, it also encourages the teaching of other subject areas which can include:</p> <ul style="list-style-type: none"> • nutrition; • physical education; • Massachusetts and labour history; • violence prevention; • drug, alcohol and tobacco abuse prevention; • family life skills; • basic career exploration and employability skills; • technology education; • computer science and keyboarding skills; • environmental science and protection; • global education and geography; • community service learning.
<p>Final four years of education - Grades 8 to 12 (age 14 to 18)</p> <p>The Massachusetts High School Programme of Studies (MassCore)(see above section 15.1) is intended to ensure that the state's high school graduates arrive at college or the workplace well prepared and so reduce the number of students taking remedial courses in college. MassCore recommends a comprehensive set of subject area courses and units as well as other learning</p>	<p>Additional learning opportunities include:</p> <ul style="list-style-type: none"> • Advanced Placement; • Senior independent project; • Dual enrolment courses taken for both high school and college; • Online courses; • work-based learning.

¹² Other additional core courses include business education, career and technical Education (CTE), health, technology (e.g. computer science, desktop publishing, multi-media and web design), or any of the subjects above.

opportunities to complete before graduating from high school.

The recommended programme of studies includes:

- four years of English;
- four years of maths;
- three years of a lab-based science;
- three years of history;
- two years of the same foreign language;
- one year of an arts programme;
- five additional "core" courses such as business education, health, and/or technology.¹²

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