

7.4. SECOND NATIONAL LANGUAGE

The second national language is Swedish or Finnish.

SWEDISH

Instruction in Swedish must give the pupil capabilities for interacting and cooperating with our country's Swedish-speaking population, and for Nordic cooperation. The tasks of the instruction are to accustom the pupils to using their language skills and to foster in the pupils an appreciation for Finland's bilingualism and the Nordic way of life. The pupil also learns that language, as a skill subject and means of communication, requires long-term, diverse practice in communication. In academic terms, Swedish is a cultural and skill subject.

Swedish as the A-language

The syllabus for Swedish as the A-language (whose study, by definition, begins at some point in grades one through three) can be studied as a core or optional language. In instruction in a core language, the assimilation of good study habits creates a foundation for language studies that will begin later. With the study of the A-language, the pupil also begins to develop intercultural competence.

GRADES 1–2

When instruction in languages commences before the third grade, the primary focus consists of oral communication practice and understanding, repeating, and applying what one has heard. The written form of the language is used as a support for oral practice according to the situation. The instruction is to be integrated into the pupil's sphere of experience, or into contents and themes already handled in the instruction. The instruction is functional and playful in nature.

OBJECTIVES

The pupils will

- become conscious of language and its meaning
- feel encouraged to speak at the word and phrase level by listening to and understanding the language
- acquire a foundation for language study skills and subsequent language studies
- take an interest in learning languages and in life in various cultures.

CORE CONTENTS

- everyday life and the immediate environment; home and school
- age-appropriate Swedish-language songs, nursery rhymes, and games
- key general information on the Swedish-language cultural and language region, and, to some extent, the other Nordic countries

GRADES 3–6

The task of the instruction is to accustom the pupil to communicating in Swedish in very concrete, immediately familiar situations - for the most part orally at first, then increasing the written communication gradually. The pupil is to realize that languages and cultures are different, but not different in value. The pupil must develop good language study habits.

OBJECTIVES

Language proficiency

The pupils will

- learn to relate basic information about themselves and their immediate spheres and to communicate in Swedish in simple, everyday speaking situations, relying on the aid of an interlocutor as necessary
- come to understand, with the support of a situational connection, the main content of text or speech dealing with everyday life and routine events
- learn to write short messages in the most familiar, easily predicted situations connected with everyday needs and experiences.

Cultural skills

The pupils will

- get to know the way of life of the Swedes, Swedish-speaking Finns, and other Nordic peoples
- learn to communicate with representatives of Swedish-language culture in everyday situations, in a manner natural to that culture.

Learning strategies

The pupils will learn to

- act responsibly and enterprisingly in language-learning situations
- make use of one-on-one and small-group situations in language studies
- use a textbook, a dictionary, and other information acquisition tools independently
- use new words and structures in their own output
- recognize their own personal strengths and weaknesses as language learners and evaluate their work and language skills in different areas, in relation to the objectives.

CORE CONTENTS

Situations and subject areas from the perspectives of the Finnish- and Swedish-speaking regions

- the immediate environment and the familiar persons, things, and functions that form essential parts of it, such as home, family members and friends
- school, schoolmates, and teachers
- rural and urban living
- leisure-time activities associated with the age group
- doing business in various situations
- basic information about the way of life of the Swedes, Swedish-speaking Finns, and other Nordic peoples

Structures

- key grammar from the standpoint of communication

Communication strategies

- recognizing the main elements of a spoken communication or written text
- finding specific information in a text or an oral communication
- planning one's own messages
- relying on non-verbal communication and an interlocutor's help in oral interaction
- relying on written aids in the production and interpretation of text

DESCRIPTION OF GOOD PERFORMANCE AT THE END OF THE SIXTH GRADE

Language proficiency

Level of language performance in the sixth grade, according to the language proficiency scale (Appendix 2):

LISTENING COMPREHENSION	SPEECH	TEXT COMPREHENSION	WRITING
A1.3 Functional elementary language proficiency	A1.2 Developing elementary language proficiency	A1.3 Functional elementary language proficiency	A1.2 Developing elementary language proficiency

Cultural skills

The pupils will know the main contents of, and differences between, their own culture and Swedish-language culture. The pupils will be able to interact with Swedish-speaking individuals in simple everyday situations.

Learning strategies

The pupils will make natural use of some working approaches effective from the standpoint of language study and learning, such as the textbook, the dictionary, and one-on-one and small-group discussion; they will understand the importance of persistent practice and will have become accustomed to evaluating their own work.

The task of the instruction is to expand the pupil's proficiency in Swedish to include more demanding social situations and the area of pastimes, services and public life. The role of written language in the instruction grows. The pupil's skills in functioning in the way demanded by Swedish-language culture increase, and he or she acquires more strategies suited to the study of languages.

OBJECTIVES

Language proficiency

The pupils will

- come to understand clear, standard-language speech and text containing general or specific factual information and relevant to the life of a school-age young person
- learn to cope with simple social encounters and the most common service situations and to describe their own immediate circle
- learn to write brief messages and list-style descriptions of very familiar subjects
- learn to recognize the main differences between the Swedish spoken in Finland and Sweden.

Cultural skills

The pupils will

- get to know the cultures of Sweden and Swedish-speaking Finland, and other Nordic cultures, and to understand the reasons for cultural differences
- learn to communicate and function in a manner acceptable in the culture in question, in normal everyday situations
- learn to be aware of the culturally bound nature of values.

Learning strategies

The pupils will learn to

- use a variety of working approaches effective from the standpoint of language study and learning, and to make good use of what they have learned in mother tongue instruction
- utilize information and communication technology in information acquisition and communication
- carry out small-scale projects independently or in a group
- evaluate their work and their language skills in different areas, in relation to the objectives, and to change their working approaches as necessary.

CORE CONTENTS

Situations and subject areas from the perspectives of the Finnish- and Swedish-speaking regions

In addition to what has come up in the third through sixth grades:

- pastimes and spending leisure time
- travel

- public services
- study, work, and business life
- sustainable development
- health and welfare
- the media

Structures

- main principles of verb usage
- use of nouns, adjectives, and the most common pronouns and prepositions
- main principles of syntax; conjunctive structures

Communication strategies

- linguistic reasoning or reasoning based on situational hints, for clarifying the content of a message
- making use of feedback received in an interactive situation
- compensating for deficient language skills by approximate expression
- monitoring one's own language usage
- use of certain idioms peculiar to oral interaction, such as those associated with giving feedback and taking, beginning, maintaining, and ending a turn to speak

FINAL-ASSESSMENT CRITERIA FOR A GRADE OF 8

Language proficiency

Level of language performance in the ninth grade, in accordance with the language proficiency scale (Appendix 2):

LISTENING COMPREHENSION	SPEECH	TEXT COMPREHENSION	WRITING
A2.2 Developing basic language proficiency	A2.1 First stage of basic language proficiency	A2.2 Developing basic language proficiency	A2.1 First stage of basic language proficiency

Cultural skills

The pupils will know the relationship, differences, and similarities between their own cultures and Swedish culture, as well as those cultures' historical roots.

Learning strategies

The pupils will make regular use of working approaches effective from the standpoint of language study and learning. The pupils will have realized the importance of the persistent communication practice that is essential to studying a language.

Swedish as the B-language (B1)

GRADES 7–9

The objective of instruction is the achievement of a basic Swedish-language proficiency emphasizing oral interaction. The instruction also promotes the development of the pupil's language study skills and intercultural competence.

OBJECTIVES

Language proficiency

The pupils will

- learn to relate basic information about themselves as individuals, and about their immediate circles, and to communicate in Swedish in normal everyday speaking situations, relying when needed on an interlocutor's help
- come to understand text or speech dealing with everyday life's events, with the support of a situational connection
- learn to write short messages in familiar, easily predicted situations connected with everyday needs and experiences.

Cultural skills

The pupils will

- come to understand the way of life of the Swedes, Swedish-speaking Finns, and other Nordic peoples
- learn to communicate with representatives of Swedish-language culture in everyday situations, in a manner natural to that culture.

Learning strategies

The pupils will learn to

- use various working approaches effective from the standpoint of language study and learning, such as preparing their own messages and using tools of information acquisition
- monitor and correct their output, and compensate for deficiencies in their language skills by using a variety of comprehension and communication strategies
- evaluate their work and language skills in different areas, in relation to the objectives.

CORE CONTENTS

Situations and subject areas from the perspectives of the Finnish- and Swedish-speaking regions

- the immediate environment and the familiar persons, things and functions that form essential parts of it, such as home, family members and friends
- spending leisure time; pastimes
- travel

- school, schoolmates, and teachers
- rural and urban living
- shopping and using public services
- basic information on the way of life of the Swedes, Swedish-speaking Finns, and other Nordic peoples

Structures

- the most essential principles of verbs
- declension of nouns and adjectives
- main principles of syntax; conjunctive structures

Communication strategies

- linguistic reasoning or reasoning based on situational hints, for clarifying the content of a message
- making use of feedback received in an interactive situation
- monitoring one's own language usage
- compensating for deficient language skills by approximate expression
- use of certain idioms peculiar to oral interaction, such as those associated with giving feedback, taking and maintaining a turn to speak, and beginning and ending a spoken communication

FINAL-ASSESSMENT CRITERIA FOR A GRADE OF 8

Language proficiency

Level of language performance in the ninth grade, according to the language proficiency scale (Appendix 2):

LISTENING COMPREHENSION	SPEECH	TEXT COMPREHENSION	WRITING
A2.1 Initial stage of basic language proficiency	A1.3 Functional elementary language proficiency	A1.3 Functional elementary language proficiency	A2.1 Initial stage of basic language proficiency

Cultural skills

The pupils will know the relationships, differences, and similarities between the ways of life of the Swedes, Swedish-speaking Finns, and other Nordic peoples. The pupils will be familiar with the everyday forms of interaction among our country's Finnish- and Swedish-speaking inhabitants, and will understand the importance of Nordic cooperation.

Learning strategies

The pupils will make regular use of working approaches effective from the standpoint of study and learning. The pupils will have realized the importance of the persistent communication practice that is essential to language study.

Native-level Swedish

The purpose of the syllabus for native-level Swedish is to give bilingual pupils in Finnish-language comprehensive schools the chance to improve and deepen the practical skills in Swedish that they have acquired at home or in their immediate environment. It is also the aim of the syllabus to make those pupils aware of their bilingualism and cultural heritage and to strengthen that identity.

GRADES 1–6

OBJECTIVES

The pupils will

- become aware of the Swedish language and its structure and usage
- learn to read and write Swedish, with their linguistic abilities serving as the starting point
- deepen and give nuances to their vocabulary in different subject areas, and learn to keep spoken, slang, and refined Swedish separate
- learn to read age-appropriate literature in Swedish; they will become acquainted with the cultural heritage of Finland's Swedish-speakers
- adopt a positive attitude towards both of our country's languages and develop a realistic picture of their abilities, so that they will want and know how to read, listen to, and learn Swedish on their own, too.

CORE CONTENTS

Interaction skills

- practising the courage and confidence to communicate and developing one's own means of expression in different situations

Literature and culture

- fairly long texts, such as literary narratives, and fairly easy factual texts whose subject areas are the same as those in A-Swedish
- Swedish in everyday speech; slang and dialect in comparison to refined language
- Finnish-Swedish songs, poems, games, and festive occasions
- local lore and nature lore

Knowledge of language

- parts of speech, inflection of words, and fundamentals of syntax
- parsing words on different bases; terminology of grammar

DESCRIPTION OF GOOD PERFORMANCE AT THE END OF THE SIXTH GRADE

Level of language performance in the sixth grade, according to the language proficiency scale (Appendix 2):

LISTENING COMPREHENSION	SPEECH	TEXT COMPREHENSION	WRITING
B1.1 Functional basic language proficiency	B1.1 Functional basic language proficiency	A2.2 Developing basic language proficiency	A2.2 Developing basic language proficiency

In addition, the pupils must demonstrate a desire to improve their language skills and must have a basic knowledge of the differences between Swedish and Finnish. They are also to demonstrate a desire and ability to read age-appropriate Swedish literature.

GRADES 7–9

OBJECTIVES

The pupils will

- deepen their knowledge and awareness of language so that they are able to analyse, improve, develop, and use language in various ways in both speech and writing
- learn to discuss things other than everyday topics, too, using natural Swedish with nuances; and to describe events and give narrations and short presentations
- learn to read somewhat longer and more difficult literary and non-fictional texts, also; to ponder their contents; and to explain the meaning of idiomatic words and expressions
- learn to write reports and narratives in good Swedish and to correct and improve their output, according to the instructions
- be willing to follow public events and topical issues in the mass media, in both Finnish and Swedish, and to give an account of what they have heard and read and take a position thereon
- have read Swedish-language literature, take an interest in continuing their pursuit of reading, and be able to tell something about the cultural heritage typical of Finland's Swedish-speakers, and of the Nordic peoples, in literature, art, and music
- get something of an introduction to other Nordic languages, and to the Nordic countries' current conditions, with the aid of language samples and easy texts.

CORE CONTENTS

Interaction skills

- practising the courage and confidence to communicate, and developing one's own means of expression in different situations
- development and assessment of the pupil's reading, communication, and media-use habits and skills

Literature and culture

- basic knowledge of Finland's, the Nordic countries' and the world's language situation, and of the importance of one's native language
- reading complete works in Swedish; classification of literature into different genres; different types of texts; analysis of fictional structures using certain key concepts

Knowledge of language

- introduction to the norms of standard Swedish; use of standard oral and written language in different situations
- study and application of the basic concepts of the structure of the Swedish language; examination of texts (word order, sentence structure, variation of language style)

FINAL-ASSESSMENT CRITERIA FOR A GRADE OF 8

Level of language performance in the ninth grade, according to the language proficiency scale (Appendix 2):

LISTENING COMPREHENSION	SPEECH	TEXT COMPREHENSION	WRITING
B2.1 Basic level of independent language proficiency	B2.1 Basic level of independent language proficiency	B1.2 Fluent basic language proficiency	B1.2 Fluent basic language proficiency

In addition, the pupils must demonstrate a desire to develop their language skills and bilingualism, and are to possess a basic knowledge of Swedish-language literature and the Finnish-Swedish and Nordic cultures.

If the pupil has been studying in accordance with the syllabus for native-level Swedish for only a part of the school year, the syllabus which he or she has studied for the greatest part of the time is marked on the basic education certificate, and his or her performance is also evaluated in accordance with the syllabus in question.

FINNISH

In the basic education, in Swedish schools in Finland, the foremost goal of instruction in Finnish is to give monolingual Swedish-speaking pupils knowledge and skills in the country's majority language, so as both to allow them to get along satisfactorily in everyday language situations, oral as well as written, and to encourage them to partake of entertainment, topical commentary, and information offered by the mass media in Finnish, too. Some knowledge of Finnish culture and literature and a basic knowledge of the structure, task, and linguistic variation of the language constitute part of the studies in the subject. Bilingual pupils are to be offered the chance to develop and deepen their existing knowledge and skills in accordance with a separate native-level syllabus.

Finnish as the A-language

Instruction conforming to the syllabus for Finnish as an A-language is given when study of the subject commences as a core language at some point in the first through sixth grades, most typically in the third grade, and when the pupil is not so bilingual as to be able to participate in instruction conforming to a native-level syllabus. Those pupils who choose some other core language in the third year and begin their Finnish-language studies as an optional language (A2) somewhat later on also receive Finnish-language instruction in accordance with the A-syllabus.

GRADES 1–2

Instruction in the Finnish language can begin as early as the first or second grade, as an introductory course. The instruction focuses on listening to, repeating, and speaking the language in concrete, illustrative, and preferably play-like situations. Important words and phrases can be written down to support the learning. The instruction is integrated into the pupils' experiential world or into themes and contents already treated in other subjects.

OBJECTIVES

In first- and second-grade instruction, The pupils will

- become acquainted with the Finnish language and situations in which the language is used in their immediate environment
- feel encouraged to speak Finnish at the word and phrase level, with the help of language listening and comprehension
- acquire a foundation for Finnish-language studies and become conscious of the basic differences between Finnish and Swedish in respect of vocabulary and ways of expression
- adopt a positive attitude towards Finnish language and culture, and towards languages and language learning generally.

CORE CONTENTS

- subjects, themes, words, and phrases from everyday life at home, at school, and in the immediate environment
- Finnish songs, sayings, nursery rhymes, and games, and a knowledge of how, and in what sort of situations, Finnish is needed in the pupils' immediate environment, the media, and elsewhere in Finland

GRADES 3–6

In the third through sixth grades, the pupils are expected to assimilate the most important structures and a basic vocabulary for everyday language situations and subject areas, so that they understand Finnish, can react and answer when addressed, and venture to express themselves in Finnish. The pupils should develop a positive attitude towards Finnish and feel they are able and willing to learn it. The fundamental studies also include an introduction to the country's bilingual cultural tradition, encompassing various places, customs, sayings, songs, and stories.

OBJECTIVES

In the third through sixth grades, the pupils will learn a basic Finnish vocabulary, a store of Finnish-language expression, and Finnish's basic structures, so that they

- understand, react, and are able to respond when addressed, and when presented with personal questions, requests, and wishes, at least in routine everyday situations
- are able to discuss subjects, themes, illustrations, or related situations on the syllabus by using simple words
- know how to talk about themselves and their immediate spheres; they will cope with some very common everyday situations, such as telephone conversations and meeting people
- understand descriptions of events, simple instructions, and short dialogues and stories dealing with everyday things
- know how to write messages and brief stories about familiar themes, and how to write simple sentences, questions, and answers that have come up in learning situations
- know what ordinary words, phrases, and sentences mean in Swedish, and know how, when necessary, to translate some short phrases and sentences from Finnish to Swedish, and vice versa, utilizing the necessary aids.

CORE CONTENTS

Subject areas, situations, and tasks

- fields of activity, vocations, aids, means of transport, and expressions of time
- places and events at home, at school, and in the immediate environment

- nature, sports, and hobbies
- dressing, manners, nutrition, and health
- feelings; basic tasks of language, especially in speech, such as greeting, thanking, showing, telling, expressing wishes, making requests, asking questions, and presenting feelings and opinions, in Finnish

Structures

- The most important pronouns and interrogative words in Finnish, principle parts of verbs, locative cases in the singular, numerals and use of the Finnish partitive in expressions of amount and price
- basic conjugation of active-voice verbs, affirmative and negative sentences, simple ways of presenting questions and answers, the basic form of the verb, some fundamental rules of object declension

DESCRIPTION OF GOOD PERFORMANCE AT THE END OF THE SIXTH GRADE

Level of language performance in the sixth grade, according to the language proficiency scale (Appendix 2):

LISTENING COMPREHENSION	SPEECH	TEXT COMPREHENSION	WRITING
A1.3 Functional elementary language proficiency	A1.3 Functional elementary language proficiency	A2.1 Initial stage of basic language proficiency	A1.3 Functional elementary language proficiency

The levels are indicative. In grading, some allowance can be made as late as the sixth year for the pupils' varying levels of contact with Finnish. It is however important that the same criteria be followed in assessments in the same municipality and similar language regions. In addition to meeting the proficiency level standards given in Appendix 2, the pupils have to be able to state some of the most important differences between Finnish and Swedish, and must have a command of basic information, such as names, localities, places and manners in Finland. In addition to the assimilation and expression of knowledge and skills, the pupils must also be able to demonstrate familiarity with, and mastery of, the learning strategies and modes of working needed in studying Finnish and languages in general.

GRADES 7–9

In the seventh through ninth grades, vocabulary and the mastery of linguistic structures develop so that the pupils will understand various texts, including fairly long ones, and venture to converse in Finnish; they will be able to express their thoughts, needs and wishes, in more detailed fashion than before, also in formal situations. General language proficiency, social awareness, cultural knowledge, and writing skills connected to both the cross-curricular themes that integrate the curriculum and instruction in other subjects develop at the same time.

OBJECTIVES

In addition to the aforementioned objectives, pupils in the final stages of their basic education will be able to

- follow authentic Finnish-language discussion of familiar subject areas when the discussion is not too fast-paced or particularly unrefined or dialectal, and take part in the discussion to some extent
- also understand the main content and important details of short texts, telephone conversations dealing with familiar subjects, dialogues, factual texts, and instructions, and be able to respond and explain the main content
- demonstrate their understanding of the main content of Finnish-language news and weather reports, advertisements, instructions, and easy articles or programmes that are important or interest the pupils
- cope with everyday service situations handled orally, and express their own wishes and opinions in those situations at least passably
- write messages, letters, brief stories, summaries, and opinion pieces about personal and everyday subjects; and know, with the aid of a dictionary, how to translate simple sentences or a short text written about a familiar subject from Finnish to Swedish or vice versa
- demonstrate a general and basic knowledge of Finnish culture, and read easy literary texts, with guidance or using aids.

CORE CONTENTS

Subject areas, situations, and tasks

- leisure time, tourism, tourist sights, nature, the living environment
- commerce and services, work and technology, consumption, dating, and health
- communication and society
- different forms of language; Finnish literature and culture
- practical tasks of language, such as different ways to ask and answer questions, inform, describe, doubt, command, and explain

Structures

- recapitulation of the fundamental principles of verb phrases; declension of the plural; consonant gradation; the possessive suffix; compound verbs; passive-voice verbs; normal ways of expressing conditional, potential and imperative actions in practical language-usage situations
- comparison of adjectives and adverbs; third infinitive
- other nominal expressions and the most common participial constructions, the goal being comprehension of authentic text
- basic rules of the Finnish subject and object

FINAL-ASSESSMENT CRITERIA FOR A GRADE OF 8

Level of language performance in the ninth grade, according to the language proficiency scale (Appendix 2):

LISTENING COMPREHENSION	SPEECH	TEXT COMPREHENSION	WRITING
B1.1 Functional basic language proficiency	A2.1 Initial stage of basic language proficiency	A2.2 Developing basic proficiency	A2.2 Developing basic proficiency

In the third through sixth grades, assessment focuses on the speaking of Finnish, learning capabilities, and the mastery of key words and structures. In the seventh through ninth grades, skill in writing short texts, comprehension of separately read texts, interest in studying Finnish, and the already-assimilated knowledge of Finland and Finnish culture are also assessed. In assessment performed during each unit or thereafter, the pupils' studying and language-learning abilities, working approaches, and communication skills are taken into consideration.

Finnish as the B-language

This syllabus is intended for pupils who have not begun their study of Finnish as the A-language at some time during the third through sixth grades. The primary objective of the syllabus is that the pupils learn to understand Finnish in everyday situations at least passably, and also venture to express themselves in those situations. At the same time, a foundation is created for further studies in the Finnish language, and knowledge is imparted respecting Finnish manners and culture. Further instruction based on this syllabus is also offered in upper secondary schools and vocational upper secondary education and training.

GRADES 7–9

OBJECTIVES

The pupils will

- understand personal questions and simple Finnish-language conversation in routine everyday situations; they will react, answer, talk about themselves, and discuss the subjects under consideration
- understand short texts and excerpts such as stories, dialogues, signs, and advertisements concerning everyday things; they will be able to understand the main content of advertisements and mass-media headlines, at least with the aid of a dictionary; they will know how to write personal messages, short answers, and stories connected with the subject areas of the syllabus; and they will satisfactorily master both the spelling of frequently occurring words and the most important fundamental structures taught

- demonstrate, in the aforementioned contexts, a basic familiarity with Finnish manners and Finnish matters in general, a positive personal attitude towards Finnish, and a desire to learn more.

CORE CONTENTS

Subject areas and situations

- persons, places, attributes, times, and events related to home, school, and the immediate environment
- transport, service situations, prices, and various helpful devices
- Finland's sights and natural environment
- nutrition and health
- sports and pastimes
- dating, feelings, and the basic tasks of language particularly in speech, as for example in greeting, thanking, showing, informing, asking questions, answering, and expressing a wish or an opinion

Structures

- interrogative words and the ordinary pronouns; case declension in the singular; the plural partitive; verb conjugation in the active voice, especially in the present and the past imperfect; different ways of stating wishes and commands; the first infinitive in conjunction with modal verbs; conditional expressions; structures of the third infinitive
- questions and answers, affirmative and negative sentences, basic rules of the object

FINAL-ASSESSMENT CRITERIA FOR A GRADE OF 8

Level of language performance in the ninth grade, according to the language proficiency scale (Appendix 2):

LISTENING COMPREHENSION	SPEECH	TEXT COMPREHENSION	WRITING
A2.1 Initial stage of basic language proficiency	A1.3 Functional elementary language proficiency	A2.1 Initial stage of basic language proficiency	A2.1 Initial stage of basic language proficiency

In addition, the pupils must demonstrate a familiarity with the special features of Finnish, and with the country's sights and culture. They must also demonstrate a positive attitude and such study methods and strategies as will be needed in the further study of Finnish.

Native-level Finnish

The objectives of the syllabus for native-level Finnish are to give bilingual pupils in Swedish-comprehensive schools in Finland the opportunity to improve and deepen the practical language skills they have assimilated at home or in their immediate environments, and to make them conscious of their language, cultural inheritance, and bilingual identity. Instruction in native-level Finnish provides the opportunity to organize the instruction of monolingual Swedish-speaking pupils more precisely and to assess them better, since there is thus no need for pupils with different language backgrounds or pupils who have received instruction in accordance with different syllabi to be taught together and be compared with one another.

GRADES 1–6

OBJECTIVES

The objectives of instruction in native-level Finnish in the first through sixth grades are that bilingual pupils

- become more aware of their language usage and the structure, vocabulary and meanings of Finnish, so that they are better able to keep Finnish and Swedish separate and to enrich their oral and written language
- learn to read and write Finnish, the starting point being their individual linguistic abilities
- deepen and enrich their vocabularies regarding different subject areas, and learn to keep spoken language, slang, and standard language separate from one another
- learn to read age-appropriate literature in Finnish and receive an introduction to the Finnish cultural inheritance, for example in the form of sayings, customs, songs, poems, and traditions, preferably comparing these to the Swedish cultural tradition and integrating learning contents into other academic subjects
- adopt a positive attitude towards both our national languages and form a realistic picture of their personal abilities, so that they are able and willing to read, listen to, and learn Finnish better on their own as well.

CORE CONTENTS

- fairly long texts, such as literary narratives, and fairly easy factual texts on the same subject areas as those in Finnish as the A-language
- standard language and the comparison of standard language to slang and dialect
- Finnish songs, poems, games, and festive holidays
- local lore and nature lore
- duration of sounds; end of word
- writing words separately and as compounds
- inflection of fairly difficult words
- verb forms in the active and passive voices
- the Finnish partitive; use of object cases; verb government
- the Finnish genitive and locative cases, and comparison of those cases to Swedish prepositions

DESCRIPTION OF GOOD PERFORMANCE AT THE END OF THE SIXTH GRADE

Level of language performance in the sixth grade, according to the language proficiency scale (Appendix 2):

LISTENING COMPREHENSION	SPEECH	TEXT COMPREHENSION	WRITING
B1.2 Fluent basic language proficiency	B1.1 Functional basic language proficiency	B1.2 Fluent basic language proficiency	B1.1 Functional basic language proficiency

The criteria are indicative. As late as the sixth grade, they are applied taking the language environment and the amount of instruction in native-level Finnish into account. In addition to meeting the proficiency level standards stated on the scale, the pupils have to demonstrate that they are aware of their language and language skills, that they want to observe and correct their language, both written and oral, and that they possess a basic knowledge of the differences between Swedish and Finnish. They must also demonstrate an interest in reading and master the reading of age-appropriate literature in Finnish.

GRADES 7–9

OBJECTIVES

The objective of instruction in native-level Finnish in the seventh through ninth grades is that bilingual pupils

- deepen their knowledge and awareness of language so that they are able to analyse, improve, and develop their language, and to use it in various ways, both orally and in writing
- keep up a natural conversation in Finnish, with nuances, about things other than everyday subjects, give short oral presentations; and explain events and give accounts
- learn also to read longer and more difficult factual texts and a variety of literary texts, to consider their contents, and to explain the meaning of idiomatic words and expressions
- learn to organize and write narratives and reports, using good Finnish, and to correct and improve their output according to instructions
- learn to follow public events and current issues in the mass media, in both Finnish and Swedish, to explain what they are reading or hearing, and to form an opinion
- have read Finnish-language literature, take an interest in continuing to read age-appropriate literature, and know how to tell something about the heritage of Finnish culture in literature, art, and music.

CORE CONTENTS

Subject areas

- knowledge of nature and the environment
- health and dating, clothes and fashion

- commerce and services, leisure time and sports, vocations and education, culture and well-known Finns, the mass media, and society
- using a telephone, e-mail, and the Internet
- literature, film, and music
- different genres of art and stylistic genres

Grammar and linguistic correctness

- difficult types of inflection, use of active and passive-voice verbs, verb moods
- declension and usage of numerals and pronouns
- infinitives and impersonal expressions
- subordinate clauses and participial phrases
- rules of writing and abbreviation
- organization, editing, and correction of texts
- formal and informal speaking situations
- preserving the purity of the language

FINAL-ASSESSMENT CRITERIA FOR A GRADE OF 8

Level of language performance in the ninth grade, according to the language proficiency scale (Appendix 2):

LISTENING COMPREHENSION	SPEECH	TEXT COMPREHENSION	WRITING
B2.1 Basic level of independent language proficiency	B2.1 Basic level of independent language proficiency	B2.1 Basic level of independent language proficiency	B1.2 Fluent basic language proficiency

Bilingual pupils who have studied according to this syllabus are to be assessed in accordance with the criteria of the syllabus in question, not the A-syllabus. The pupils concerned are thus assessed by criteria different from those applicable to monolingual Swedish-speakers. According to A Common European Framework of Reference for Languages: Learning, Teaching, Assessment, the proficiency level must be at least B2.1 (basic level of independent language proficiency) in language comprehension and speaking, and at least B1.2 (fluent basic language proficiency) in writing. In addition, the pupils must be able to adapt their speech as required by the situation, using good standard language in formal situations at least; to keep Finnish and Swedish words, idioms, meanings and sentence structures separate; and to demonstrate a desire to observe and develop their language skills and bilingualism. Furthermore, they must master a basic knowledge of Finnish culture and literature. The assessment also takes account of the pupil's attention to details, communication skills, ability to study Finnish, and desire to learn new things both in and about Finnish.

If the pupil has been studying in accordance with the syllabus for native-level Finnish for only a part of the school year, the syllabus which he or she has studied for the greatest part of the time is marked on the basic education certificate, and his or her performance is also evaluated in accordance with the syllabus in question.

7.5 FOREIGN LANGUAGES

Foreign-language instruction must give the pupils capabilities for functioning in foreign-language communication situations. The tasks of the instruction are to accustom the pupils to using their language skills and educate them in understanding and valuing how people live in other cultures, too. The pupils also learn that a language, as a skill subject and means of communication, requires long-term and diversified practice with communication. As an academic subject, a foreign language is a cultural and skill subject.

The A-language

The A-language is a core subject. It may also be commenced as an optional subject. The adoption of good study habits in A-language core instruction creates a basis for subsequent language studies. With the study of the A-language, the pupil also begins to develop intercultural competence.

GRADES 1–2

If language instruction commences before the third grade, the focus at first is on the comprehension, repetition, and application of what one has heard, and on practising oral communication. The written form of the language is used to support oral practice according to the situation. The instruction is to be integrated into contents and themes that lie within the pupil's sphere of experience or have already been treated in the instruction. The pupil also gets a preliminary introduction to intercultural differences. The instruction is functional and playful in nature.

OBJECTIVES

The pupils will

- become conscious of language and its meaning
- feel encouraged to speak at the word and phrase level by listening and understanding the language
- acquire a foundation for language study skills and subsequent language studies
- take an interest in learning language, and in life in various cultures.

CORE CONTENTS

- everyday life, immediate environment, home and school
- age-appropriate songs, nursery rhymes, and games
- key general information on the target language's culture and language region

The task of the instruction is to accustom the pupil to communicating in the foreign language in very concrete, personally immediate situations, at first orally for the most part, then gradually increasing the written communication. The pupil is to realize that languages and cultures are different, but not different in value. The pupil must develop good language study habits.

OBJECTIVES

Language proficiency

The pupils will

- learn to relate basic information about themselves as individuals, and about their immediate circles, and to communicate in the target language in simple everyday speaking situations, depending on the aid of an interlocutor when necessary
- come to understand the main content of speech or text dealing with day-to-day life and routine events, with the support of a situational connection
- learn to write short messages in the most familiar, predictable situations associated with day-to-day needs and experiences.

Cultural skills

The pupils will

- get to know the culture of the target language and will gain a preliminary introduction to the similarities and differences between that culture and Finnish culture
- learn to communicate with representatives of the target language culture in everyday situations, in a manner natural to that culture.

Learning strategies

The pupils will learn to

- function responsibly and enterprisingly in language-learning situations
- exploit one-on-one and small-group situations in language learning
- use a textbook, a dictionary, and other information acquisition tools independently
- use new words and structures in their own output
- recognize their own strengths and weaknesses as language learners, and to evaluate their work and language skills in different areas, in relation to the objectives.

CORE CONTENTS

- Situations and subject areas from the perspectives of the language regions of the pupil's language and the language being studied
- the immediate environment and the persons, things and functions that form essential parts of it, such as home and family members
- school, schoolmates, and teachers
- rural and urban living
- leisure-time functions associated with the age group
- doing business in various situations
- basic knowledge of one's own culture and the culture of the target language, possibly including the target language culture in Finland, depending on the language

Structures

- main grammatical principles peculiar to the language in question, from the standpoint of communication
- the writing system of the target language when necessary

Communication strategies

- recognizing the main ideas in speech or written text
- finding specific information in a spoken communication or text
- planning one's messages
- relying on non-verbal communication and an interlocutor's help in oral interactive situations
- relying on written aids in producing and interpreting text

DESCRIPTION OF GOOD PERFORMANCE AT THE END OF THE SIXTH GRADE

Language proficiency

Level of language performance in the sixth grade, according to the language proficiency scale (Appendix 2):

	LISTENING COMPREHENSION	SPEECH	TEXT COMPREHENSION	WRITING
English	A2.1 Initial phase of basic language proficiency	A1.3 Functional elementary language proficiency	A2.1 Initial phase of basic language proficiency	A1.3 Functional elementary language proficiency
Other languages	A1.3 Functional elementary language proficiency	A1.2 Developing elementary language proficiency	A1.3 Functional elementary language proficiency	A1.2 Developing elementary language proficiency

Cultural skills

The pupils will

- know the main contents of, and key similarities and differences between the culture of their own language and the target language
- be able to interact with speakers of the target language in simple everyday situations.

Learning strategies

The pupils will

- make natural use of some working approaches effective from the standpoint of studying and learning languages, such as one-on-one and small-group discussion, and the use of a textbook and dictionary
- understand the importance of persistent practice and have become accustomed to evaluating their own work.

GRADES 7–9

The instructional task is to expand the pupil's language skills so as to encompass more demanding social situations, as well as the area of pastimes, services, and public life. The proportion of written language in the instruction increases. The pupils' ability to act according to the demands of the target language culture grows, and they acquire more strategies characteristic of language learning.

OBJECTIVES

Language proficiency: Languages other than English

The pupils will

- become able to understand clear, standard-language speech and text containing general or factual information relevant to the life of a school-age young person
- learn to cope with simple social encounters and ordinary service situations; they will learn to describe their immediate spheres
- learn to write short messages and list-style descriptions of very familiar subjects.

Language proficiency: English

The pupils will

- become able to understand the main ideas and key details in clearly organized texts, whether heard or read, that contain broader general information, too
- learn to cope with somewhat more demanding informal conversational situations, also, and to relate, orally or in writing, everyday matters that also include some details
- learn to be aware of some of the key differences between the different variants of English.

Cultural skills

The pupils will

- get to know the target language culture and come to understand it against their own cultural backgrounds
- learn to communicate and act in normal day-to-day situations in a manner acceptable in the subject culture
- learn to be aware of the culturally bound nature of values.

Learning strategies

The pupils will learn to

- use various working approaches and learning strategies effective from the standpoint of language study and learning, and to utilize them in learning in their native languages
- make use of information and communication technology in communication and information acquisition
- carry out small-scale projects independently or in a group
- evaluate their own work and language skills in different areas, in relation to the objectives, and to change their working approaches as needed.

CORE CONTENTS

Situations and subject areas from the perspectives of the language regions of the pupil's language and the language being studied

In addition to what has come up in the third through sixth grades:

- pastimes and spending leisure time
- travel
- public services
- study, work, and business life
- sustainable development
- health and welfare
- the media

Structures

- basic declension of verbs, key tenses
- use of nouns, adjectives, and the most common pronouns and prepositions
- main principles of syntax, conjunctive structures

Communication strategies

- linguistic reasoning or reasoning based on situational hints, for clarifying the content of a message
- utilizing feedback obtained in an interactive situation
- compensating for deficient language skills by approximate expression

- monitoring one's own language usage
- use of certain idioms peculiar to oral interaction, such as those associated with giving feedback, taking and maintaining a turn to speak, and beginning and ending a spoken communication

FINAL-ASSESSMENT CRITERIA FOR A GRADE OF 8

Language proficiency

Level of language performance in the ninth grade, according to the language proficiency scale (Appendix 2):

	LISTENING COMPREHENSION	SPEECH	TEXT COMPREHENSION	WRITING
English	B1.1 Functional basic language proficiency	A2.2 Developing basic language proficiency	B1.1 Functional basic language proficiency	A2.2 Developing basic language proficiency
Other languages	A2.2 Developing basic language proficiency	A2.1 Initial phase of basic language proficiency	A2.2 Developing basic language proficiency	A2.1 Initial phase of basic language proficiency

Cultural skills

The pupils will know about the way of life in, and history of, the target language's language region.

Learning strategies

The pupils will

- make regular use of working approaches effective from the standpoint of language study and learning
- have realized the importance of the persistent communication practice essential to language study.

The B-language (B1)

GRADES 7–9

The objective of instruction is to achieve a basic proficiency in a foreign language. The instruction also furthers the pupil's language study skills and the development of his or her intercultural competence.

OBJECTIVES

Language proficiency

The pupils will

- learn to relate basic information about themselves as individuals, and about their immediate circles, and to communicate in normal, day-to-day speaking situations, relying when needed on an interlocutor's help
- become able to understand texts or speech dealing with events in everyday life, with the support of a situational connection
- learn to write short messages in familiar, very predictable situations connected with day-to-day needs and experiences.

Cultural skills

The pupils will

- come to understand the way of life in the target language's language region
- learn to communicate with representatives of the target language culture in everyday situations, in a manner natural to that culture.

Learning strategies

The pupils will learn to

- use a variety of working approaches effective from the standpoint of language study and learning, such as producing their own messages and using information acquisition tools
- monitor and correct their output, and to compensate for their deficiencies in language skill by using a variety of comprehension and communication strategies
- evaluate their own work and language skills in different areas, in relation to the objectives.

CORE CONTENTS

Situations and subject areas from the perspectives of the language regions of the pupil's language and the language being studied

- the immediate environment and the familiar persons, things and functions that form essential parts of it, such as home, family members, and friends
- pastimes and spending leisure time

- school, schoolmates, and teachers
- travel
- rural and urban living
- shopping and the use of public services
- basic knowledge of one's own culture and the culture of the target language

Structures

- main grammatical principles peculiar to the language in question, from the standpoint of communication

Communication strategies

- linguistic reasoning or reasoning based on situational hints, for clarifying the content of a message
- utilizing feedback obtained in an interactive situation
- monitoring one's own language usage
- compensating for deficient language skills by approximate expression
- use of certain idioms peculiar to oral interaction, such as those associated with giving feedback, taking and maintaining a turn to speak, and beginning and ending a spoken communication

FINAL-ASSESSMENT CRITERIA FOR A GRADE OF 8

Language

Level of language performance in the ninth grade, according to the language proficiency scale (Appendix 2):

	LISTENING COMPREHENSION	SPEECH	TEXT COMPREHENSION	WRITING
English	A2.1 Initial stage of basic language proficiency	A1.3 Functional elementary language proficiency	A2.1 Initial stage of basic language proficiency	A1.3 Functional elementary language proficiency

Cultural skills

The pupils will know the relationships, differences, and similarities between their own cultures and the culture of the target language.

Learning strategies

The pupils will

- make regular use of working approaches effective from the standpoint of language study and learning
- have realized the importance of the persistent communication practice essential to language study.

Optional language (B2)

Instruction in an optional language must emphasize spoken communication in the most ordinary day-to-day situations and function at the same time as an introduction to more extensive study of the language in upper secondary education. This core curriculum is intended for four weekly lessons per year.

OBJECTIVES

Language proficiency

The pupils will

- learn to communicate, with an interlocutor's support, in speaking situations that deal with basic personal information and are connected to immediate needs
- become able to understand easily predictable questions, instructions, requests, and prohibitions associated with day-to-day life
- learn to read predictable, simple messages related to day-to-day life
- learn to write cards, e-mail messages, memos, other very short messages, and some basic information about themselves as individuals, and about their immediate spheres.

In the terms of the proficiency scale, the objective is a level of A1.1–A1.2 for speaking and writing, and a level of A1.2–A1.3 for listening and reading comprehension.

Cultural skills

The pupils will

- come to know and understand Finnish culture and the culture of the target language, and become acquainted with the differences and similarities between them.

Learning strategies

The pupils will learn to

- use their language skills boldly
- utilize knowledge, skills, and strategies acquired in other languages
- evaluate different areas of their work and language skills in relation to the objectives.

CORE CONTENTS

Situations and subject areas from the perspectives of the language regions of the pupil's language and the language being studied

- language related to the culture of manners, in basic interactive situations
- talking about oneself and the immediate environment
- family and leisure time
- coping with everyday communication situations, such as shopping, eating, and travelling

Structures

- sentence formation and main grammatical principles characteristic of the language in question, from the standpoint of communication

Communication strategies

- recognizing the main ideas in a spoken communication or written text
- finding defined information in a spoken communication or text
- planning one's messages
- monitoring one's language usage
- relying on an interlocutor's help in oral interactive situations
- relying on written aids in one's output

Sami as a foreign language

Sami as a foreign language instruction can be given in any of the three Sami languages (North, Inari or Skolt Sami) spoken in Finland. In the Sami as a foreign language instruction the pupils are given tools of interaction and collaboration with native speakers of Sami languages, they become accustomed to use their Sami language skills and learn to understand and appreciate Sami culture.

As an academic subject, Sami language is a cultural and skill subject. The pupil will learn that as a skill subject and a tool of communication Sami languages require diversified, long-term communicative practise. Instruction in Sami languages widen and enrich the pupil's understanding of Sami culture. Sami languages can be taught as an optional subject.

Sami as the A-language

GRADES 1–2

If instruction in Sami commences before the third grade, the focus at first is on the comprehension, repetition, and application of what the pupil has heard, and on practising oral communication. The written form of the language is used to support the oral practice according to the situation. The instruction is to be integrated into contents and themes either already treated by the instruction, or within the pupil's sphere of experience. The pupil also receives a preliminary introduction to Sami culture. The instruction is functional and playful in nature.

OBJECTIVES

The pupils will

- become aware of the Sami language and its importance
- feel encouraged to speak at the word and phrase level by listening to and understanding the language
- take an interest in studying languages and in life in various cultures
- acquire a foundation for language study skills and subsequent language studies.

CORE CONTENTS

- everyday life, the immediate environment, home and school
- age-appropriate songs, nursery rhymes, games, and Sami fairy tales and stories
- key general information related to the Sami culture and language

The instructional task is to accustom the pupil to communicating in the Sami language in concrete and personally immediate situations, at first for the most part orally, then gradually increasing the amount of written communication. The instruction introduces the pupil to the Sami homeland and language region, the Sami culture, and the linguistic relationship between Sami and Finnish. The pupil is to realize that languages and cultures are different, but not different in value. The pupil is also to develop good language study habits.

OBJECTIVES

Language proficiency

The pupils will

- learn to relate basic information about themselves as individuals, and about their immediate spheres, and to communicate in the subject language in simple day-to-day speaking situations, as necessary relying on the aid of an interlocutor
- become able to understand the gist of speech or text dealing with day-to-day life and routine events, with the support of a situational connection
- learn to pronounce the Sami language naturally
- learn to write short messages in the most familiar, easily predictable situations connected with day-to-day needs and experiences.

Cultural skills

The pupils will

- get to know the Sami homeland, language region, way of life, and culture
- learn to communicate with representatives of the Sami culture in everyday situations, in a way natural to that culture
- get to know Sami literature, art, joiku and leu'dd (traditional unaccompanied Sami singing), and other Sami music.

Learning strategies

The pupils will learn to

- act responsibly and enterprisingly in language-learning situations
- utilize one-on-one and small-group situations in language study
- use a textbook, a dictionary, and other information acquisition independently
- use new words and structures in their own output
- recognize their own strengths and weaknesses as language learners and evaluate their language skills and work in relation to the objectives.

CORE CONTENTS

Situations and subject areas

- everyday life, immediate and extended family, friends, home, school, Sami names, Sami culture of manners and folk tradition

- home region and immediate environment, village, nature, animals, dwellings, city, the Sami area
- time, months, days
- Sami stories, narratives, joiku and leu'dd

Structures

- key grammatical principles from the standpoint of communication: main cases and tenses, such as present and perfect
- formation of sentences

Communication strategies

- recognizing the main items in text or speech
- finding defined information in text or speech
- planning messages
- relying on non-verbal communication and an interlocutor's aid in oral interaction
- relying on written aids in producing and interpreting text

DESCRIPTION OF GOOD PERFORMANCE AT THE END OF THE SIXTH GRADE

Listening comprehension

The pupils will

- understand the main points in a clear, slow, short spoken communication dealing with simple matters familiar and immediate to the pupil
- understand the personal questions, commands, requests, and messages presented to them, if repeated when necessary

Speaking

The pupils will

- know how to pronounce Sami naturally
- be able to talk about themselves as individuals, their immediate environment, and other subjects of personal interest briefly and understandably
- use idioms characteristic of Sami, such as greetings, introductions, thanking, apologizing, and saying goodbye, in the most common immediate situations
- know how to pose questions about familiar subjects and give brief answers to questions that concern themselves and the immediate environment.

Text comprehension

The pupils will

- understand short, clear, texts that deal with familiar subjects; they will use aids (dictionaries) as needed
- understand short, simple, personal messages, such as letters and cards that are addressed to them.

Writing

The pupils will

- be able to write short, coherent texts about familiar subjects, for example about themselves or their immediate environment
- be able to write comprehensible, simple, everyday messages, such as cards and letters
- know the differences between spoken and written language.

Cultural skills

The pupils will

- be clear about the linguistic relationship between Finnish and Sami, and the area inhabited by the Sami
- know Sami fairy tales and narratives
- be aware of the coexistence and equality of different cultures.

Learning strategies

The pupils will

- make natural use of working approaches typical to language study, such as one-on-one and group discussion and the use of a textbook and dictionary
- understand the importance of persistent practice
- be accustomed to evaluating their own work.

GRADES 7–9

The task of instruction is to expand the pupil's language skills to more demanding social situations, and to the area of pastimes, services and public life. The role of written language in the instruction grows. The pupils' skills in acting as the Sami culture requires increase, and they acquire more strategies characteristic of language study.

OBJECTIVES

Language proficiency

The pupils will

- become able to understand clear speech and text that contains general or factual information and relates to the life of a school-age young person
- learn to cope with simple social encounters and the most common service situations; to talk about themselves as individuals, and their lives; and to describe their immediate spheres
- learn to write short messages and list-style descriptions concerning very familiar subjects.

Cultural skills

The pupils will

- learn to function in the Sami-language community
- learn to be aware of the culturally bound nature of values

- come to understand the importance of Sami-language proficiency in the Sami area
- get to know the areas in which the different Sami languages are spoken, and to realize the differences among those languages
- acquire the ability to participate in joint activities with Sami young people.

Learning strategies

The pupils will learn to

- use various learning strategies and working approaches effective from the standpoint of language study and learning, and to make good use of what they have learned in mother tongue studies
- utilize information and communication technology in information acquisition and communication
- carry out small-scale projects independently or in a group
- evaluate the different areas of their own work and language skills in relation to the objectives, and to change their working approaches as needed.

CORE CONTENTS

Situations and subject areas

In addition to what has come up in the first through sixth grades:

- social networks
- pastimes and spending leisure time
- public services
- study, work, and business life; the Sami community; the Sami area
- sustainable development
- the print media, entertainment, advertisements
- art, theatre, the electronic media, literature, Sami stories and narratives, folk tradition, joiku and leu'dd
- health and welfare

Structures

- basic declension of verbs, most important tenses
- usage of nouns, adjectives, and the most important pronouns and postpositions
- main grammatical principles, conjunctive structures

Communication strategies

- linguistic reasoning or reasoning based on situational hints, for clarifying the content of a message
- utilizing feedback received in an interactive situation
- compensating for deficient language skills by approximate expression
- examining one's language usage

FINAL-ASSESSMENT CRITERIA FOR A GRADE OF 8

Listening comprehension

The pupils will

- understand the main points of clear spoken communication dealing with familiar and immediate things, delivered via the media or otherwise
- understand speech well enough to cope with the most ordinary day-to-day interactive and business-transaction situations, for example in shops, post offices, and banks, or when receiving guidance
- recognize Sami's variants and know the most important vocabulary differences pertinent to day-to-day living.

Speaking

The pupils will

- cope with the most ordinary day-to-day interactive and business-transaction situations, for example in shops, post offices, and banks
- manage with short social dialogues
- be able to present short, list-style descriptions of familiar subjects.

Text comprehension

The pupils will

- understand the main points of short, clear stories and non-fictional texts, including newspaper reports that deal with familiar subjects
- be able, using aids, to perceive the outlines of more difficult complete texts
- understand short, written messages, letters, cards, or computer-transmitted messages that are addressed to them.

Writing

The pupils will

- be able to write the short messages necessary in day-to-day communication situations, such as e-mail messages or cards
- be able to write comprehensible personal letters or messages
- know how to write both comprehensible, coherent text about everyday subjects from their own environment, and comprehensible stories, utilizing aids when needed.

Cultural skills

The pupils will

- know Sami narratives, fairy tales, and mythology
- be aware of the main features of Sami's variants and the areas where they are spoken
- know key facts about Sami culture and ways of making a living
- have acquired a conception of the relationships, differences, and similarities between, and the historical roots of, their own cultures and Sami culture.

Learning strategies

The pupils will

- make regular use of working approaches effective from the standpoint of language study and learning
- have realized the importance of the persistent communication practice essential to language study
- function interactively in one-on-one and small-group work.

Optional language (B2)

GRADES 7–9

Optional-language study has to emphasize spoken communication in the most ordinary day-to-day situations and serve at the same time as an introduction to more lengthy studies in the language in question in upper secondary education. This core curriculum is intended for four weekly lessons per year.

OBJECTIVES

Language proficiency

The pupils will

- learn to communicate, with an interlocutor's support, in speaking situations that are connected with immediate needs and deal with basic personal information
- become able to understand easily predictable questions, instructions, requests, and prohibitions related to day-to-day living
- learn to read predictable, simple messages related to day-to-day living
- learn to write cards, e-mail messages, memos, other very short messages, and some basic information about themselves as individuals, and their immediate circles
- learn to pronounce the Sami language naturally.

Cultural skills

The pupils will

- get to know the Sami way of life and the area in which the Sami live and Sami is spoken
- come to understand the importance of the Sami language in the Sami area
- come to know some of the key elements of Sami culture, such as joiku and leu'dd, stories, and folk tradition.

Learning strategies

The pupils will learn to

- use their language skills boldly
- utilize information, skills, and strategies acquired in other languages
- evaluate their own work and language skills in different areas, in relation to the objectives.

CORE CONTENTS

Situations and subject areas

- language related to the culture of manners in basic interaction
- speaking about oneself and the immediate environment
- family and leisure time
- everyday life
- coping with day-to-day communication and business-transaction situations
- the Sami community and Sami ways of making a living
- the Sami folk tradition

Structures

- main grammatical principles characteristic of Sami from the standpoint of communication

Communication strategies

- recognizing the main elements of a text or spoken communication
- finding defined information in a text or spoken communication
- planning messages
- observing one's language usage
- relying on the help of an interlocutor in oral interaction
- relying on written aids in one's output

Assessment takes place in accordance with the objectives.

Optional Latin (B2)

Studies in optional Latin emphasize the key cultural and language materials and serve at the same time as an introduction to more lengthy studies in Latin in upper secondary school. The objectives and contents of the subject differ from those of contemporary languages, since Latin is not used as a contemporary language is.

OBJECTIVES

The pupils will

- be able to understand easy text and to use the language within the limits of the language material they are studying
- be aware of the position of Latin among European languages and consciously try to recognize its impacts on the languages they know or are studying
- know and consciously try to recognize forms and elements inherited from Graeco-Roman culture in Finnish and other European cultures
- know how to use grammar and a dictionary to clarify texts.

CORE CONTENTS

- fairly narrow vocabulary
- main points of morphology; key syntactic phenomena
- historical and cultural-historical classical material relevant to the texts' subject areas
- in addition to classical Latin, material offered by medieval and modern Latin

7.6 MATHEMATICS

The task of instruction in mathematics is to offer opportunities for the development of mathematical thinking, and for the learning of mathematical concepts and the most widely used problem-solving methods. The instruction is to develop the pupil's creative and precise thinking, and guide the pupil in finding and formulating problems, and in seeking solutions to them. The importance of mathematics has to be perceived broadly: it influences the pupil's intellectual growth and advances purposeful activity and social interaction on his or her part.

Mathematics instruction must progress systematically and create a lasting foundation for the assimilation of mathematical concepts and structures. The discipline's concrete nature serves as an important aid in bringing together the pupil's experiences and systems of thought with the abstract system of mathematics. Problems that come up in day-to-day situations, and that can be resolved with the aid of mathematical thinking or operations, are to be utilized effectively. Information and communication technology are to be used to support the pupil's learning process.

GRADES 1-2

The core tasks of mathematics instruction in the first and second grades are the development of mathematical thinking; practice concentrating, listening and communicating; and acquisition of experience as a basis for the formulation of mathematical concepts and structures.

OBJECTIVES

The pupils will

- learn to concentrate, listen, communicate, and develop their thinking; they will derive satisfaction and pleasure from understanding and solving problems
- gain diverse experience with different ways of presenting mathematical concepts; in the concept formation process, the central aspects will be spoken and written language, tools, and symbols
- understand that concepts form structures
- understand the concept of the natural number and learn the basic computational skills appropriate to it
- learn to justify their solutions and conclusions by means of pictures and concrete models and tools, in writing or orally; and to find similarities, differences, regularities, and cause-and-effect relationships between phenomena
- become practised in making observations about mathematical problems that come up and are challenging and important from their personal standpoints.

CORE CONTENTS

Numbers and calculations

- number, numeral, and number symbol
- properties of numbers: comparison, classification, ordering, using concrete means to break down and assemble numbers
- principle on which the decimal system is based
- addition and subtraction, and connections between calculations, using natural numbers
- multiplication and multiplication tables
- division, using concrete tools
- use of different ways and means of calculating: blocks and decimal tools, continuum, mental calculation, using pencil and paper
- investigating the number of various alternatives
- introducing the concept of the fraction by concrete means

Algebra

- seeing regularities, ratios, and correlations pictorially
- simple number sequences

Geometry

- observing and describing spatial relationships in the surrounding space
- observing, describing and naming geometric shapes in the environment
- recognizing, explaining, and naming two- and three-dimensional figures
- basic geometric concepts such as the point, line segment, horizontal line, ray, straight line, and angle
- making, drawing, and tracing two-dimensional figures, and recognizing and constructing three-dimensional figures;
- simple reflections and dilations

Measurement

- principle of measurement
- length, mass, surface area, volume, time, and price
- use of measuring devices
- use and comparison of the most important units of measurement
- assessment of measurement results

Data processing and statistics

- looking for, collecting, and storing data
- reading simple tables and diagrams
- presenting assembled data as a bar graph

DESCRIPTION OF GOOD PERFORMANCE AT THE END OF THE SECOND GRADE

Thinking and working skills

The pupils will

- demonstrate an understanding of concepts associated with mathematics by using them to solve problems, and by presenting and explaining them to the teacher and other pupils
- be able to reach justified conclusions and to explain what they have done, and know how to present their solutions by means of pictures and concrete models and tools, orally and in writing
- know how to perform comparisons, such as comparisons of length; to place things in order; to find opposites for things; to classify things according to different attributes; to state the location of an object, for example by using the words above, below, on the right, on the left, behind, and between; to compare the size of sets, using the words more, fewer, as many, a lot, and a few; and to write and use the comparative symbols $>$, $=$, and $<$.

Numbers, calculations, and algebra

The pupils will

- know the importance of numbers in stating amount and order; they will know how to write numbers and present a continuum
- master the breaking down and assembly of numbers, comparison, and the formation of sums and number sequences; they will know about odd and even numbers
- know about and understand the decimal system as a place system, and know how to use it
- understand addition, subtraction, multiplication, and division and know how to apply them to everyday situations
- know how to look for the number of alternative solutions in simple events
- know simple fractions, such as one half, one third and one quarter, and know how to present them by concrete means.

Geometry

The pupils will

- know the basic forms of plane and three-dimensional figures, including the quadrangle, triangle, circle, sphere and cube, and know the basic concepts of geometry – the point, line segment, horizontal line, ray, line, and angle – and their relationship to the simplest plane figures
- know how to use simple reflections and dilations.

Measurement

The pupils will

- know how to measure with simple measuring devices, and know the main quantitative expressions, such as length, mass, volume, and time
- be able to note the necessary information in simple, day-to-day problems, and to use their mathematical knowledge and skills to solve those problems.

GRADES 3–5

The core tasks of mathematics instruction in the third through fifth grades are to develop mathematical thinking, introduce the learning of mathematical models of thinking, strengthen basic calculations and the concept of the number, and provide experiences as a basis for assimilating the concepts and structures of mathematics.

OBJECTIVES

The pupils will

- gain experience in succeeding with mathematics
- learn, through investigation and observation, to formulate mathematical concepts and concept systems
- learn to use mathematical concepts
- learn basic calculation skills and learn to solve mathematical problems
- find similarities, differences, regularities, and cause-and-result relationships between phenomena
- justify their actions and conclusions and present their solutions to others
- learn to present questions and conclusions on the basis of observations
- learn to use rules and follow directions
- learn to do sustained, focused work, and to work in a group.

CORE CONTENTS

Numbers and calculations

- strengthening the concept of the decimal system, introduction to the 60-based system with the help of the times on a clock
- classification and organization of numbers
- multiplication
- division in a ratio, division into parts, divisibility
- algorithms and mental calculation
- concept of the fraction, conversion of fractions
- concept of the decimal fraction
- relationship between the fraction, decimal fraction, and percentage
- addition and subtraction of fractions and decimal fractions, and their multiplication and division by natural numbers
- evaluating, checking, and rounding the results of calculations
- use of parentheses
- concept of the negative whole number
- investigating the number of different alternatives

Algebra

- concept of the algebraic expression
- interpretation and writing of number sequences
- regularities, ratios, and correlations
- seeking solutions to equations and inequalities by deduction

Geometry

- dilations and reductions; similarity and scale
- reflections across a line and around a point, symmetry, congruence, using concrete means
- the circle and its parts
- parallel and perpendicular lines
- angle measurement and classification of angles
- study and classification of different types of polygons
- circumference and area
- study of the geometric properties of two- and three-dimensional figures
- reinforcing comprehension of the principle of measurement
- use, comparison, and conversion of units of measurement
- evaluation of measurement results; revision of measurement

Data processing, statistics and probability

- searching for, gathering, storing, and presenting data
- the coordinate system
- reading simple tables and diagrams
- concept and computation of the arithmetic mean
- classification and organization of data; introduction to the concepts of mode and median
- experiences with classical and statistical probability

DESCRIPTION OF GOOD PERFORMANCE AT THE END OF THE FIFTH GRADE

Thinking and working skills

The pupils will

- demonstrate an understanding of concepts associated with mathematics by using them in problem-solving, and by presenting them in diverse ways - with instruments, pictures, symbols, words, numbers, or diagrams
- try consciously to focus their attention when making observations; they will be able to communicate their observations and thoughts in diverse ways - by acting, speaking, writing, and using symbols
- know how to depict real-world situations and phenomena mathematically by comparing, classifying, organizing, constructing, and modelling
- know how to group or classify on the basis of a given or chosen criterion, to look for a shared attribute, to distinguish between a qualitative and quantitative property, and to describe groups of things and objects, positing true and untrue propositions about them

- know how to present mathematical problems in a new form; they will be able to interpret a simple text, illustration, or event and to make a plan for solving the problem
- know how to follow rules.

Numbers, calculations, and algebra

The pupils will

- understand the decimal system in terms of decimal fractions, too, and know how to use it confidently; they will understand the concepts of the negative number and fraction and be able to present them by different methods
- know how to present calculations in writing and orally, and know the relationships between different calculations; they will know how to estimate in advance the magnitude of the result and, after the problem is solved, to check the stages of the calculation and evaluate the sensibleness of the solution
- know how to formulate and continue number sequences and to present correlations.

Geometry

The pupils will

- know how to form figures, following the instructions given; they will be able to notice the properties of simple geometric figures and will be familiar with the structure formed by the concepts of plane figures
- recognize similarity; they will know how to reflect a figure across a line, and to dilate and reduce figures by a given ratio; they will recognize figures that are symmetrical in relation to a line
- understand the principle of measurement; they will know how to evaluate the size of the object being measured and the sensibleness of the measurement's result, and how to state that result in appropriate units of measurement
- know how to calculate the area and perimeter of parallelograms and triangles.

Data processing, statistics, and probability

The pupils will

- know how to gather data and organize, classify, and present them as statistics; they will know how to read simple tables and diagrams
- know how to clarify the number of different events and alternatives, and to judge which is an impossible or certain event.

GRADES 6–9

The core task of mathematics instruction in the sixth through ninth grades is to deepen understanding of mathematical concepts and furnish adequate basic capabilities encompassing the modelling of everyday mathematical problems, the learning of mathematical models of thinking, and practice with remembering, focusing, and precise expression.

OBJECTIVES

The pupils will

- learn to trust themselves, and to take responsibility for their own learning in mathematics
- come to understand the importance of mathematical concepts and rules, and to see the connections between mathematics and the real world
- learn to perform calculations and solve mathematical problems
- learn to think logically and creatively
- learn to apply various methods to the acquisition and processing of information
- learn to express their thoughts unambiguously and to justify their actions and conclusions
- learn to present questions and conclusions on the basis of observations
- learn to perceive regularities
- learn to work in a sustained, focused manner, and to function in a group.

CORE CONTENTS

Thinking skills and methods

- functions that demand logical thinking, such as classification, comparison, organization, measurement, constructing, modelling, and looking for and presenting rules and correlations
- interpretation and use of concepts needed in drawing comparisons and correlations
- interpretation and production of mathematical texts
- introduction to proof: justified conjectures and experiments, systematic trial-and-error method, demonstrating incorrectness, direct proof
- solving combinatorial problems by different methods
- use of tools and drawings that assist thinking
- history of mathematics

Numbers and calculations

- strengthening basic calculation skills
- natural numbers, whole numbers, rational numbers, real numbers
- opposite numbers, absolute values, reciprocals
- time calculations, time intervals
- prime numbers, division of numbers into prime factors, rules for divisibility of numbers
- reduction of fractions, conversion of fractions to higher terms, and presentation of decimal fractions as common fractions
- multiplication and division with fractions, including decimal fractions
- reduction of expressions
- ratio and proportionality
- strengthening the concept of percentage, percentage calculation
- rounding and estimation; using a calculator
- powers using whole-number exponents
- concept of the root, square-root calculations

Algebra

- the expression and its reduction
- the exponential expression and its reduction
- concept of the polynomial; addition, subtraction and multiplication of polynomials
- concept of the variable; calculating the value of an expression
- equation, inequality, domain, solution set
- solving a first-degree equation
- solving an incomplete quadratic equation
- proportion
- pairs of equations and their resolution algebraically and graphically
- study and formulation of number sequences

Functions

- observing correlation and presenting it by means of variables
- concept of the function
- presenting a set of coordinates in a coordinate system
- interpreting simple functions and drawing their graphs in a coordinate system
- investigating the graph of a function: the function's null point, largest and smallest value, increase, and decrease
- the linear function
- direct and inverse proportionality

Geometry

- relationships between angles
- concepts related to triangles and quadrangles
- regular polygons
- the circle and related concepts
- calculating the perimeter and area of plane figures
- naming and classifying three-dimensional figures
- calculating the volume and surface area of a three-dimensional figure
- similarity and congruence
- geometric construction
- depictions of congruence: reflections, rotation, and transformation
- Pythagorean theorem
- relationships between the triangle and the circle
- trigonometry and solving the right triangle

Probability and statistics

- concept of probability
- frequency and relative frequency
- determining the average, mode, and median

- concept of dispersion
- interpretation of diagrams
- gathering and adapting information, and presenting it in a usable form

FINAL-ASSESSMENT CRITERIA FOR A GRADE OF 8

Thinking skills and methods

The pupils will

- notice parallels and regularities between different events
- know how to use logical elements such as and, or, if so, no, exists, and does not exist in their speech
- know how to judge the truth of simple propositions
- know how to transform a simple problem in text form to a mathematical form of presentation, make a plan to solve the problem, solve it, and check the correctness of the result
- know how to use classification in solving mathematical problems
- know how to present possible alternative solutions systematically, using a table, elm tree diagram, path diagram, or other diagram.

Numbers and calculations

The pupils will know how to

- estimate a possible result and prepare a plan for solving a problem; they will have dependable basic calculation skills
- raise a number to a natural-number power and be able to divide a number into its prime factors
- solve problems in which a square root is needed
- use proportion, percentage computation, and other calculations in solving problems that come up in day-to-day life.

Algebra

The pupils will know how to

- solve a first-degree equation
- reduce simple algebraic expressions
- perform calculations of powers
- formulate a simple equation concerning a problem connected to day-to-day life and solve it either algebraically or by deduction
- use pairs of equations for solving simple problems
- evaluate the logic of a result and examine the different phases of their solution.

Functions

The pupils will

- know how to determine the coordinates of a point in a coordinate system
- know how to prepare a table from number pairs according to the rule given

- know how to look for the null point of a linear function
- know how to continue a number sequence according to the rule given and be able to describe the general rule for a given number sequence verbally
- know the meaning of the constant and slope of a line equation; they will know how to determine the point of intersection of two straight lines by drawing them.

Geometry

The pupils will know how to

- recognize different geometric forms and will know their properties
- apply what they have learned to ways of calculating circumference, area, and volume
- use a compass and ruler to make simple geometric constructions
- find similar, congruent, and symmetrical figures and be able to apply this skill in investigating the properties of triangles and quadrangles
- apply the relationships between two angles in simple situations
- use the Pythagorean theorem and trigonometry to solve the parts of a right triangle
- perform measurements and related calculations and convert the most common units of measurements.

Probability and statistics

The pupils will know how to

- determine the number of possible events and organize a simple empirical investigation of probability; they will understand the meaning of probability and randomness in day-to-day situations
- read various tables and diagrams, and to determine frequencies, average, median, and mode from the given material.

7.7 ENVIRONMENTAL AND NATURAL STUDIES

GRADES 1–4

Environmental and natural studies is an integrated subject group comprising the fields of biology, geography, physics, chemistry, and health education. Instruction in the subject group includes the perspective of sustainable development. The objective of instruction is that the pupils get to know and understand nature and the built environment, themselves and other people, human diversity, and health and disease.

Instruction in environmental and natural studies relies on an investigative, problem-centred approach in which the starting points are the pupils' existing knowledge, skills, and experiences; and things, phenomena, and events connected to the pupils' environment and the pupils themselves. With the aid of experiential instruction, the pupil develops a positive relationship with nature and the environment.

The contents of, and approaches used in, environmental and natural studies are selected on the basis of the pupils' prerequisites and developmental level, in such a way that studies can also be done as field work. Concepts associated with environmental and natural studies may be organized as modules in which the surrounding world, the pupils, and their actions as members of a community are examined. Studying these modules helps the pupils understand their own environment and the interaction between the individual and the environment.

OBJECTIVES

The pupils will

- learn to act safely, so as to protect themselves in their environment, and to follow instructions at school, in the immediate environment, and in traffic
- get to know the natural and built environments in their neighbourhood, to observe the changes happening therein, and to perceive their home region as a part of Finland and the Nordic countries
- learn to obtain information about nature and the environment by observing, investigating, and using a variety of source materials
- learn to make observations using the different senses and simple research tools, and to describe, compare, and classify their observations
- learn to perform simple scientific experiments
- learn to read and draft simple maps, and to use an atlas
- learn to represent information about the environment and its phenomena by different means
- learn to use the concepts by which the environment and the phenomena and subjects embraced by those concepts are described and explained
- learn to protect the nature and to save the natural resources

- learn to develop their psychological and physical self-knowledge, respect for themselves as individuals, respect for others, and social skills
- learn concepts, vocabulary, and procedures relevant to health, disease, and the promotion of health, and learn to make choices that promote health.

CORE CONTENTS

Organisms and living environments

- basic features of living and lifeless nature
- various living environments and the adaptation of organisms to them
- most common species of plants, fungi, and animals in the pupils' immediate environment
- nature through the seasons
- life stages of flora and fauna
- source and production of food

One's immediate environment and home region, and the world as a human living environment

- the immediate environment
- times of the day, seasons
- map and main features of the terrain
- home region and province: their natural conditions, landscapes, built environment, and human activity
- Finland, the Nordic countries, other nearby regions, and the world as a place where people live

Natural phenomena

- phenomena related to sound and light; protection of hearing and eyesight
- phenomena related to heat; heat sources
- functioning principles of simple devices; investigating the strength of various structures
- magnetic and electrical phenomena

Substances around us

- substances and materials that are part of everyday life; their recycling and conservative use
- properties of air; burning and fire safety
- properties and changes of state of water; utilization of water; the water cycle in nature

The individual and health

- the human body and the stages of human growth and development in general terms
- everyday health habits and caring for one's own health
- being ill, the most common children's diseases; action in emergencies and simple first-aid measures
- the importance of family, friendship, interaction, and the recognition of feelings to well-being and mental health

Safety

- preventing bullying and violence, respecting physical inviolability, safety in school, behaviour in traffic and avoiding dangerous situations, accidents at home and during leisure time
- agreements and rules, good manners and taking other people into account, using money, respecting the property of others

DESCRIPTION OF GOOD PERFORMANCE AT THE END OF THE FOURTH GRADE

Science activities

The pupils will

- know how to make observations with the different senses and how to direct their attention towards the essential features of the object of those observations
- know how to describe, compare, and classify objects, organisms and phenomena on the basis of their various properties
- know how, with guidance, to carry out simple investigations of nature, natural phenomena, and the built environment
- know how to use a variety of information sources and how to compare, by different means, the information they have acquired
- know how to express - orally, in writing, and by drawing - the information they have acquired about nature and the built environment.

Organisms and environments

The pupils will

- understand how living and lifeless nature differ from each other; know how to describe the features of different living environments, such as a yard, park, meadow and field, and identify those environments' most common species; and be able to give examples of vertebrate and invertebrate animals
- know about the features of the changing of the seasons, and know how to describe how organisms have adapted to the different seasons, and especially to the Finnish winter
- know where foodstuffs come from and where food is produced
- know how to describe the differences between the natural and built environments; they will demonstrate an interest in, and a responsibility for, those environments, will know how to evaluate the beauty, diversity, and pleasantness of an environment
- understand a map's means of expression; know how to use the legend, compass directions, and scale in reading a map; and know how to draw a simple map of the schoolyard and their own immediate environment
- know how to describe natural conditions and human activity in their home region and province
- know how to identify Finland, the Nordic countries, and other nearby regions; they will recognize the scenic wealth of those areas
- discern their home region as a part of Finland and Finland as one of the Nordic countries, and understand the world as a place where people live.

Natural phenomena and substances around us

The pupils will

- know how to use central concepts and perceive concepts in their entirety
- know how to use simple measuring instruments such as a clock, linear measures, a thermometer, and a magnifying glass; and use self-made tools to make observations
- know how to explain the action of simple devices such as a lever, wheel, and spring, and know how to investigate the strength of different structures
- know how to connect up a simple electrical circuit using a battery, lamp, and wires; know the electrical devices used in a home; understand that using electricity is associated with dangers; and know how to use electrical devices safely
- know about various sources of light, sound, and heat; recognize and know how to investigate light-, sound- and heat-related phenomena such as the propagation of sound, the propagation and reflection of light, the flow of heat, and heating
- know about ways of protecting eyesight and hearing, and of preventing injuries from fire, and know how to act accordingly
- know how to investigate the properties of air and water, and changes of state of water, and how to describe the cycle of water in nature
- understand the transformation of a substance into another substance, as for example when a candle or wood burns; know about highly flammable materials; and know how to use simple fire extinguishers
- know about the properties and utilizations of various substances and materials, and know that at home there can be harmful substances such as medicines, washing and cleaning compounds, solvents, and tobacco and alcohol products
- know how to sort wastes, avoid littering, and know how to spare water, electricity, and heat.

The individual and health

The pupils will

- know how to describe growth, development, and the different stages of life span and be able to name the most important parts and main vital functions of the human body
- know about day-to-day practices and habits that promote health - a daily rhythm, adequate sleep and rest, nutrition, regular meals, daily exercise, proper working positions at school and home, posture, oral health, hygiene, and dressing
- know the basic rules of functioning in a group, and of courteous behaviour; they will know how to recognize and name various emotions, and learn that expression of emotions can be regulated
- know how to describe the most common children's diseases, their symptoms, and self-care; they will know the basic rules of using medicines; they will know simple first-aid skills and know how to give an alarm and seek help when needed.

Safety

The pupils will

- know how to describe various characteristics of bullying and violence; they will know about the individual's right to physical inviolability and recognize the differences between acceptable and inappropriate touching; they will know how to get help for themselves when needed and who will help at school and in the local community
- know, according to their age, what is and is not permissible activity
- know and recognize factors that threaten safety in the immediate environment, and when moving in traffic, in the water, or on the ice; as pedestrians and cyclists they will know the main traffic regulations and understand why the agreed-upon instructions and regulations must be followed.

7.8 BIOLOGY AND GEOGRAPHY

GRADES 5–6

In biology instruction, life and its phenomena are investigated. The instruction is organized so that the pupil learns to identify species, comes to understand the interaction between organisms and their environments, and learns to appreciate and preserve biodiversity. The objective of biology instruction is to guide the pupils in getting to know themselves, too, as human beings and part of nature. In outdoor instruction, the pupil is to acquire positive experiences with nature and learn to observe the environment. Biology instruction must be inquiry-based learning. The instruction is conducted both outdoors and in the classroom.

In geography instruction, the world and its various regions come under examination. The instruction must help the pupil understand phenomena associated with the activity of human beings and the natural world, and the interaction of those phenomena in different regions. The objective of geography instruction is to expand the pupil's conception of the world from Finland to the whole of Europe and the rest of the world. The instruction is provided so that the pupil gets a sense of the richness of natural and cultural environments around the world and learns to appreciate them. Instruction in geography must create a foundation for intercultural tolerance and internationalism.

In the fifth and sixth grades, health education is incorporated into instruction in biology and geography. The objective of instruction in health education is that the pupils come to understand their personal growth and development as a physical, psychological, and social process, and as an interaction between that person and his or her environment.

Instruction in biology and geography is to emphasize responsibility, the protection of nature, and the preservation of living environments. It must also support the pupil's growth as an active citizen committed to a sustainable lifestyle.

OBJECTIVES

The pupils will

- get to know about species, their structure and life, and their adaptation to their living environments
- learn to perceive a population as a whole and to classify organisms
- learn to move about in the natural environment and observe and investigate nature outdoors
- come to understand that people depend on the rest of nature in their food production
- develop their environmental literacy, act in an environmentally friendly way, care for their local environment, and protect nature
- know the basic things about a human anatomy and vital functions
- respect growth and development as each individual's personal process, recognize the identifying characteristics of puberty, and understand human sexuality

- ponder questions bearing on growth, development, human diversity, and social interaction
- take responsibility for their own actions and take other people into consideration
- draw and interpret maps, and use statistics, diagrams, pictures, and electronic messages as sources of geographic information
- perceive a map of the world and know its main nomenclature
- understand the dependence of human activity on the possibilities that the environment offers on earth
- familiarize themselves with Europe's geography and the world's other regions and learn to appreciate and take a positive attitude towards other countries and their peoples and cultures.

CORE CONTENTS

Organisms and living environments

- identification of the main flora and fauna in nearby areas, guided gathering of plants
- living environments such as forest and swamp, food chains, utilization of forests
- plant growth and its experimental investigation, reproduction of animals and plants
- source and production of food, garden products

Anatomy, vital functions, growth, development, and health of the human being

- structure and main vital functions of the human body; reproduction; physical, psychological and social changes accompanying puberty
- respecting and protecting one's body; factors that promote and detract from healthy growth and development; individual variation in sexual development
- social factors associated with human relations, caring, and emotional control; tolerance; rights and responsibilities of children of the pupils' age

Biodiversity

- importance of biodiversity, public rights of access, citizen's responsibilities

Europe as part of the world

- Europe on the world map, map view of Europe
- Europe's climatic zones, vegetation zones, and human activity

Diversity of human life and living environments in the world

- world map's main nomenclature; map skills
- rain forests, savannas, steppes, deserts, areas of winter precipitation (Mediterranean), and temperate and cold zones, as human living environments; diversity of human life in various environments
- interaction of nature and human activity in the world; environmental changes engendered by humans

DESCRIPTION OF GOOD PERFORMANCE AT THE END OF THE SIXTH GRADE

Nature study skills

The pupils will

- know how to move about in the natural environment and how to observe and investigate nature
- know how to describe simple investigations that they have performed concerning nature and the rest of the environment, and how to explain the investigative results
- identify the most common plant species and know how to collect plants from the immediate environment in accordance with instructions.

Organisms and living environments

The pupils will

- know the different vertebrate groups and identify the most common mammals, birds, and fishes, and know how to give examples of how animals adapt to their environment
- know that green plants produce their food themselves, by assimilation
- know how to explain the main principles of the food chain, with the aid of an example
- understand, and be able to provide examples of, why and how human beings depend on nature; they will be able to explain the source of basic foods
- be able to give examples of how the immediate natural environment and the residential environment can be preserved and protected.

Anatomy, vital functions, growth, development, and health of the human being

The pupils will

- know how to describe basic aspects of about the human being's structure and vital functions
- know how to examine changes linked to their own growth and development, to explain puberty and changes in sexual development in girls and boys, and to give examples of the individual manifestation of those changes
- be able to give examples of how emotional expression can be regulated, and of how things can be examined from the perspective of other people, too; they will know how to describe, with examples, how people differ in their expression of emotions
- know the rights and responsibilities specific to their age.

Map skills

The pupils will

- know how to look in an atlas for places they are studying; they will make good use of map symbols and scales when reading a map and know how to interpret various maps
- know how to interpret statistics, diagrams, and pictures, as well as information transmitted by electronic messages, and how to evaluate different data sources critically
- know how to draw simple maps and diagrams by themselves.

Europe as part of the world

The pupils will

- know, generally, Europe's states and their capitals, and be able to describe the variation of natural conditions and human activity in Europe.

Diversity of human life and living environments in the world

The pupils will

- know the key designations on the world map – continents, oceans, largest mountain ranges, rain forest and desert areas, and so forth
- know that the world has different climatic and vegetation zones; know how to give examples of how different climatic conditions, such as temperature and amount of precipitation, affect human activity, especially agriculture and residential living, in different zones; they will know how to describe human life in different types of environments
- know how to give examples, from different regions, of how human activity, such as the construction of cities, industrial construction, overgrazing, and the gathering of firewood have caused changes in the environment
- know how to identify features of their own and foreign cultures.

Biology

GRADES 7–9

In biology instruction, life and its phenomena and prerequisites come under investigation. The instruction is to develop the pupils' knowledge of nature and guide them in understanding basic natural phenomena. The objective is that the pupils also get an introduction to evolution, the fundamentals of ecology, and the structure and vital functions of the human being. In biology instruction the pupil is guided in focusing attention on the interactive relationships between people and the rest of nature, and human responsibility for protecting natural diversity receives emphasis.

Biology instruction must be inquiry-based learning and it is to develop the pupil's thinking in the natural sciences. The objective of the instruction is to give the pupil the ability to observe and investigate nature, and to utilize the potential of information technology in searching for information on biology. The instruction is provided so that the pupils have positive experiences of nature study, their environmental awareness develops, and their desire to preserve living environments and life's various forms grows.

OBJECTIVES

The pupils will

- learn to use concepts and methods of information acquisition and research that are characteristic of biology
- learn to depict basic phenomena of life
- learn to identify species, to appreciate biodiversity, and to take a positive stance towards its preservation
- learn to discern the structure and operation of ecosystems

- get to know the principles of growing and cultivating plants and take an interest in growing plants
- get to know the basic structure and main vital functions of the human being, and to understand the biological foundation of sexuality
- get to know the main concepts associated with heredity
- learn to recognize environmental changes in the pupils' home region, to consider the reasons for them, and to present possible solutions to problems
- come to understand the main objectives of environmental protection and the principles of sustainable consumption of natural resources.

CORE CONTENTS

Nature and ecosystems

- identification of the main species of plants, fungi, and animals in the pupils' home region; guided collection of plants
- the ecosystem and its structure and operation; distinctive features of forest and aquatic ecosystems; independent research on one ecosystem
- introduction to forestry and crop husbandry
- biodiversity

Life and evolution

- structure and activity of the cell
- emergence, development, and organization of a population
- biological and cultural evolution of the human being; distinctive features of the human species
- potentials of biotechnology; related ethical questions

The human being

- structure and main vital functions of the human being
- human sexuality and reproduction
- importance of genotype and the environment in the development of human characteristics

The common environment

- ecologically sustainable development and the substance and objectives of environmental protection
- investigating the status of, and changes in, one's living environment; examining measures to improve the status of one's immediate environment; weighing one's environmental behaviour

FINAL-ASSESSMENT CRITERIA FOR A GRADE OF 8

Biology study skills

The pupils will know how to

- use a microscope when studying samples

- work in a laboratory and outdoors in accordance with the instructions given, and how to collect plants as directed
- carry out small-scale investigations independently.

Nature and ecosystems

The pupils will know how to

- divide organisms into main groups with the aid of key identifying features and how to identify plant, animal, and fungal species in the immediate natural environment
- describe the operation and basic structure of an ecosystem
- name and describe types of forests and lakes
- carry out small-scale investigations of forest, aquatic, and marsh ecosystems
- explain basic issues of forestry and crop husbandry
- depict biodiversity with examples, know how to justify its importance from the standpoint of ecological sustainability, and know the principles of the sustainable use of forests.

Life and evolution

The pupils will know how to

- describe the main features of cell structure in plants and animals
- explain photosynthesis and describe its importance from the standpoint of a population
- describe the reproduction of plants, animals, fungi, and microbes
- explain the fundamental features of evolution and the history of human evolution
- analyse a population in terms of its main groups and how to justify the grouping.

The human being

The pupils will know how to

- describe the main features of the operation and structure of the human being's most important tissues, organs, and systems
- explain the various manifestations of sexuality
- explain, in general terms, the formation of gametes, sexual intercourse, fertilization, the course of pregnancy, and birth
- use the key concepts associated with inheritance.

The common environment

The pupils will know how to

- depict ecologically sustainable development and the importance of environmental protection and the preservation of biodiversity
- perform small-scale investigations on the state of their own living environment
- give examples of changes in the natural environment of their home region and know how to furnish examples of how they themselves can act in accordance with principles of sustainable development.

Geography

GRADES 7–9

In geography instruction the world and its various regions and regional phenomena come under investigation. The instruction is to develop the pupil's geographical conception of the world, and the regional foundation of that conception. The objective of instruction in geography is to develop the pupil's ability to examine the natural, built, and social environments, and the interaction between people and the environment, from the local to the global level. The instruction is to guide the pupil in following current events in the world, and in evaluating their impact on nature and human activity.

The geography instruction is provided so that the pupils' cultural knowledge increases and their ability to understand the diversity of human life and living environments around the world improves. Instruction in geography has to serve as a bridge between natural-science and social-science thinking. The objective of the instruction is to guide the pupils in considering the cause-and-effect relationships of the natural-science, cultural, social, and economic phenomena that occur in the world. Geography instruction must support the pupils' growth as active citizens committed to a sustainable way of life.

OBJECTIVES

The pupils will

- learn to use and interpret physical and thematic maps and to use other sources of geographic information, such as diagrams, statistics, literature, news sources, electronic messages, and photographs, including aerial and satellite photographs
- learn to determine the location of regions and the distances between places
- come to understand the effects of planetary events on the earth
- come to understand the effect on the landscape of factors that reshape the earth's surface
- come to understand the interaction between natural and human activity in Finland, elsewhere in Europe, and elsewhere in the world; they will come to know the reasons that guide the location of human functions
- learn to recognize the features of different cultures and to take a positive stance towards foreign countries, their peoples, and representatives of various cultures
- come to know and value Finland's natural and built environments; they will learn to perceive their own regional identity
- know how every citizen in Finland can have an impact on the planning and development of his or her own living environment
- understand and evaluate critically news information on such issues as global environmental and development questions, and learn to act in accordance with sustainable development themselves.

CORE CONTENTS

Earth – the human being’s home planet

- identifying the world’s physical-geographic and human-geographic map views; analysing the world regionally
- the planet’s internal and external events
- Asia, Africa, North and South America, Australia and Europe: comparison of two or more continents’ natural conditions, human activity, and cultural features

Europe

- basic features of Europe’s map view, natural conditions, landscape, and human activity; interaction of those features in Europe’s different regions
- geographic study of Europe as part of the world; Europe’s future

Finland in the world

- Finland’s map view and landscape
- interaction of nature and human activity in Finland’s different regions; the built environment and traditional landscapes
- Finland’s population and its minority cultures
- opportunities for influence in the planning and development of one’s environment
- Finland as part of the world
- small-scale research into one’s immediate environment or home municipality: the natural, built, and social environments

The common environment

- environmental and developmental questions, locally and globally; deliberation of possible solutions to problems
- environmental questions in the Baltic region
- the human being as a consumer of natural resources

FINAL-ASSESSMENT CRITERIA FOR A GRADE OF 8

Geographical skills

The pupils will know how to

- look on maps and in atlases for the places they are studying, and how to make good use of a map’s symbols and scale
- interpret physical maps, thematic maps, photographs, and statistics, and how to utilize news sources and information from data networks
- visualize geographic information with the aid of maps and drawings
- compare climate diagrams and population pyramids for different regions, and how to draw a climate diagram themselves on the basis of statistical information.

Analysing the world

The pupils will know how to

- perceive and analyse the world and recognize the basic physical-geographic and human-geographic features of the different continents
- apply the geographical knowledge they have learned to the analysis of current news information they have received from different sources, and how to locate the scenes of current events on the world map.

Analysing Europe

The pupils will know how to

- depict natural conditions and human activity in Europe's different regions, and will recognize Europe's scenic and cultural wealth
- compare Europe to other continents, and will understand that Europe interacts with other regions of the world.

Analysing Finland

The pupils will know how to

- explain how Finland's natural landscapes have taken shape, and how natural conditions have influenced human activity in Finland's different regions
- depict and analyse the location and regional features of settlement and business activity in Finland
- analyse the features of Finland's constructed environment; they will have a sense of what valued cultural and traditional landscapes are
- explain how every citizen in Finland can influence the planning and development of his or her own living environment
- plan and carry out small-scale studies of the natural and built environment in their own home region
- recognize the features of their own cultures; they will know about the minority cultures in Finland and nearby regions
- depict how Finland interacts with its neighbouring regions, the rest of Europe, and the rest of the world.

The common environment

The pupils will be able to

- explain briefly what the main global environmental and development problems are; these including the greenhouse effect's growing strength, ozone depletion, desertification, pollution of living environments, population growth, poverty, and hunger
- depict the Baltic region's environmental problems and their causes and put forward ways of improving the region's environmental status
- describe their own opportunities for contributing to the improvement of the environment's status; they will know ways by which the main global environmental and development problems can be resolved.

7.9 PHYSICS AND CHEMISTRY

GRADES 5–6

The starting point for instruction in physics and chemistry are the pupils' prior knowledge, skills and experiences, as well as their observations and investigations of natural phenomena, objects, and materials. From these, progress is made towards the basic concepts and principles of physics and chemistry. The instruction must stimulate the pupils to study science, help them consider the importance of a good and safe environment, and teach them to take care of their environment and act responsibly in it. Health education, in which the pupils' activities are examined from the perspective of safety and health, is integrated into the instruction.

OBJECTIVES

The pupils will learn to

- work and move about safely, protecting themselves and their environment and following the directions given
- make observations and measurements, to look for information on the subject of study, and to weigh the reliability of the information
- make conclusions about their observations and measurements and recognize the causal relationships associated with the properties of natural phenomena and objects
- carry out simple scientific experiments clarifying the properties of phenomena, organisms, substances, and objects, as well as the correlations among them
- use scientific knowledge in describing, comparing, and classifying concepts from the field of physics and chemistry
- understand the dangers of drug abuse.

CORE CONTENTS

Energy and electricity

- producing heat, light and motion with the aid of electricity; safety with electricity
- various ways of producing electricity and heat; energy resources

Scales and structures

- the earth's gravity and friction, and motion and equilibrium phenomena due to forces
- moving about safely and preventing accidents
- motion of the earth and moon, and the resultant phenomena; structure of the solar system; the night sky

Substances around us

- composition of air; the atmosphere
- properties of water and its importance as a solvent; investigation of natural waters; water purification

- classification of substances from the soil; methods of separation
- origin, utilization, and recycling of products and materials belonging to the living environment; safe usage of those products and materials
- active substances in intoxicants and the harmful effects of those substances

DESCRIPTION OF GOOD PERFORMANCE AT THE END OF THE SIXTH GRADE

Science activities

The pupils will

- know how to work and act safely, while protecting themselves and their environment, and will follow the directions given
- know how to make observations and measurements with different senses and measuring instruments, and how to direct their observation at the target's essential features, such as motion or temperature, and at changes in those features
- know how to draw conclusions from their observations and measurements; to present their measurement results with the aid of tables, for example; and to explain causal relationships associated with fundamental natural phenomena and the properties of objects – for example, the greater the mass a body has, the more difficult it is to put it into motion or stop it
- know how to perform simple experiments, for example to investigate what factors affect the dissolving of a solid
- know how to use concepts, quantities, and their units in describing, comparing, and classifying the properties of substances, objects, and phenomena
- know how to assemble the information they have found in different sources, and to weigh its correctness on the basis of their prior knowledge, their investigations, and discussions with others.

Energy and electricity

The pupils will

- know about different voltage supplies, such as a battery and an accumulator, and know how to do experiments in which electricity is used to produce light, heat, and motion
- know that electricity and heat can be generated from various natural resources, and know how to classify natural resources as renewable or non-renewable.

Scales and structures

The pupils will

- know how to investigate forces, such as gravity, friction, and air and water resistance, and how to recognize different types of motion
- know how to investigate how force changes the motion of an object, and how to apply scientific knowledge in traffic or moving about
- recognize phenomena caused by the motion of the earth and moon, such as times of the day, seasons, phases of the moon, and eclipses; know about the structure of the solar system; and be able to make observations of the night sky
- know how to describe danger situations in traffic and other everyday environment.

Substances around us

The pupils will

- know about the composition of air and the chemical symbols of atmospheric gases and understand the importance of the atmosphere in sustaining life
- know how to investigate the various properties of water and know how water is purified
- know how to classify substances from the soil, know the chemical symbols for elements in the soil, and know how to use various methods of separation, such as filtering, crystallization, and sifting
- know basic things about the safe use and life cycles of substances and products from the pupils' environment, and know how to investigate the properties, such as the acidity, of substances and products
- know key things about tobacco and intoxicants, know why they are harmful, and give examples of why their use is dangerous.

Physics

GRADES 7–9

The core task of physics instruction in the seventh through ninth grades is to broaden the pupils' knowledge of physics and their conception of the nature of physics, and to strengthen skills in the experimental acquisition of information.

The starting points for physics instruction are the pupils' prior knowledge, skills, and experiences, and their observations and investigations of objects, substances, and phenomena in the nature. From these, the instruction progresses towards the laws and fundamental principles of physics. The purpose of the experimental orientation is to help the pupils both to perceive the nature of science and to learn new scientific concepts, principles, and models; to develop skills in experimental work and cooperation; and to stimulate the pupils to study physics.

The instruction guides the pupil in thinking in a manner characteristic of science, in acquiring and using knowledge, and in evaluating the reliability and importance of knowledge in different life situations. The instruction gives the pupil the ability to discuss and write about questions and phenomena within the realm of physics and technology, using appropriate concepts. The instruction also helps the pupil understand the importance of physics and technology in everyday life, the living environment, and society.

The study of physics supports the pupil in developing his or her personality, and in forming a modern world view. It also provides capabilities for making everyday choices, especially in matters related to environmental protection and the use of energy resources.

OBJECTIVES

The pupils will

- learn to work and investigate natural phenomena safely, together with others
- learn scientific skills, such as the formulation of questions and the perception of problems

- learn to make, compare, and classify observations, measurements, and conclusions; to present and test a hypothesis; and to process, present and interpret results, at the same time putting information and communication technology to good use
- learn to plan and carry out a scientific investigation in which variables affecting natural phenomena are held constant and varied and correlations among the variables are found out
- learn to formulate simple models, to use them in explaining phenomena, to make generalizations, and to evaluate the reliability of the research process and results
- learn to use appropriate concepts, quantities, and units in describing physical phenomena and technological questions
- learn to evaluate the reliability of the information they have obtained from different sources
- learn to use various graphs and algebraic models in explaining natural phenomena, making predictions, and solving problems
- learn about natural phenomena and processes and the transformations of energy that take place in them, know about various natural structures and the interactions of their components, and understand causal relationships between phenomena.

CORE CONTENTS

Motion and force

- interactions and the corresponding forces; motion and equilibrium phenomena that arise from those interactions; occurrence of those phenomena in the nature
- motion and models of uniform and uniformly accelerating motion
- work done by a force; mechanical energy and power

Vibrations and wave motion

- various basic phenomena of vibrations and wave motion; production, detection, observation, reflection, and refraction of wave motion; related properties, quantities, and laws
- importance and applications of sound and light
- functioning principles of optical instruments

Heat

- phenomena associated with the heating and cooling of objects and substances; description of those phenomena with appropriate concepts and laws; importance and applications of thermal phenomena
- conservation and degradation of energy; heat as a form of energy

Electricity

- electric and magnetic forces between objects
- direct-current circuits; basic phenomena of electric circuits; safe application of those phenomena in everyday life and technology
- electromagnetic induction and its use in energy transmission; use of electricity at home

Natural structures

- natural structures and proportions

- interactions that keep structural components together; binding and release of energy in processes occurring between components
- radioactive decay; fission and fusion; ionizing radiation and its effect on animate nature; protection from radiation

FINAL-ASSESSMENT CRITERIA FOR A GRADE OF 8

Science activities

The pupils will

- know how to work safely, following directions, alone and with others
- know how to perform a science investigation according to the instructions given, to plan simple experiments, to agree on tasks and the allocation of tasks, and to set objectives or goals together with other pupils
- know how to prepare small-scale research reports, to present results with the help of tables and graphs, for example, and to interpret those results
- know how to perform a controlled experiment and to evaluate the functionality of the experimental arrangement and the reliability, precision, and meaningfulness of the results
- know that physics is a basic science, and that physical knowledge and experimental methods of information acquisition are used in other sciences, and in technology.

Motion and force

The pupils will

- know how to investigate various phenomena connected with interactions and motion and to use quantities such as time, distance, velocity, acceleration, and force in describing them
- know how to make graphic presentations, for example about the results of measuring uniform and accelerating motion; to interpret those results; to use a model of uniform (rectilinear) motion to make predictions concerning motion; and to employ the equation of average velocity to estimate and calculate distance or time
- understand the functioning principle of simple mechanical devices such as a lever and know about applications of mechanical devices and various structures
- know how to use quantities that describe the properties of objects and substances and to explain, with the aid of those quantities, the phenomena the pupils have observed – for example to compare the densities of substances and to use density in explaining various phenomena, such as floating and the function of a hot-air balloon,
- know the relationship between work and energy
- understand the physical basis of rules concerning traffic safety.

Vibrations and wave motion

The pupils will

- recognize wave motions and the phenomena characteristic of them, including for example the production, progression, detection, reflection, and refraction of wave motion
- recognize various periodic phenomena and sources of vibration in their environment, and the properties of those phenomena and vibration sources, and be able to characterize the phenomena in question with depictive quantities

- know how to investigate the reflection and refraction of light and to explain, using ray of light as a model various vision-related phenomena and the functioning of mirrors and lenses
- understand the importance of sound and light to the individual and the community, as in the case of noise, protection from noise, or light in data transmission.

Heat

The pupils will

- recognize phenomena related to the flow and storage of heat in nature and know how to interpret those phenomena
- know how to characterize basic phenomena of thermodynamics, such as thermal expansion and the heating of an object, with the aid of quantities and experimental laws that describe those phenomena
- know how to use the laws of heating, changes of state, and thermal expansion when examining and explaining thermal phenomena in nature.

Electricity

The pupils will

- know the principles of using electrical and heat-producing devices safely and economically, and know how to estimate and calculate the costs of utilizing electrical devices of various power levels
- understand the relationship between potential difference and the electrical current in a closed circuit, as well as the effect of resistance on the magnitude of electric current; and know how to make predictions about the functioning of a circuit and how to use a circuit diagram as a model of the circuit
- know about applications such as electrical devices and electronic communication
- know about the processes associated with production and transmission of electricity, such as the functioning of a transformer, and know how to explain the conversion of energy at a power plant and evaluate the advantages and disadvantages of different types of power plants.

Natural structures

The pupils will

- know the types and effects of radiation, be able to distinguish between harmful and harmless types, and know how to protect themselves against radiation
- perceive the chain and proportions of structural parts, from elementary particles to galaxies, and know how to illustrate these structures and systems with appropriate models
- know how to use key concepts of physics, such as energy, interaction, and radiation, in their discussions
- understand the conservation law of energy and be able to give examples of the conversion of energy in various processes, such as the burning of wood and the falling of a stone.

Chemistry

GRADES 7–9

The tasks of chemistry instruction in the seventh through ninth grades are to expand the pupil's knowledge of chemistry and the nature of chemical information and guide the pupil in thinking characteristic of the (natural) sciences, in acquiring knowledge, and in applying that knowledge in different life situations. The instruction provides the pupil with material essential from the standpoint of personality development and the formation of a modern world view, and helps the pupil comprehend the importance of chemistry and technology in everyday life, the living environment, and society. Chemistry instruction must provide the pupil with the ability to make everyday choices and to discuss, in particular, issues of energy production, the environment, and industry; it must also guide the pupil in taking responsibility for the environment.

The instruction relies on an experimental approach in which the starting point is the observation and investigation of substances and phenomena associated with the living environment. The pupil progresses from that point to the interpretation, explanation, and description of phenomena, and to modelling both the structure of matter and chemical reactions with the symbolic language of chemistry. The experimental orientation must help the pupil to grasp the nature of science and to adopt new scientific concepts, principles, and models; it must develop manual skills and abilities for experimental work and cooperation and stimulate the pupil to study chemistry.

OBJECTIVES

The pupil will

- learn to work safely, following instructions
- learn to use research methods typical from the standpoint of acquiring scientific knowledge, these methods including information and communication technology; and to evaluate the reliability and importance of the knowledge
- learn to carry out scientific investigation and to interpret and present the results
- learn about processes associated with the cycle of substances and the life-cycles of products, and the importance of those processes to nature and the environment
- learn to know about the physical and chemical concepts that describe the properties of substances and learn to apply those concepts
- learn concepts and models that describe the chemical bonds and structure of matter
- learn to describe and model chemical reactions with the aid of reaction equations
- learn to apply their knowledge to practical situations and choices
- learn to know about the importance of chemical phenomena and applications to the individual and society.

CORE CONTENTS

Air and water

- atmospheric substances and their importance to the individual and the equilibrium of nature
- water and its properties, such as acidity and alkalinity
- flammability of substances; the combustion reaction; its description with the symbolic language of chemistry; the properties of combustion products and effects on the environment

Raw material and products

- key elements and compounds to be found in the earth's crust and their properties, and the manufacture, use, sufficiency, and recyclability of products
- electrochemical phenomena, the electrochemical cell, and electrolysis, and their applications
- symbolic designation, classification and distinction of elements and compounds; comparison of reaction rates
- interpretation of reaction equations and the balancing of simple reaction equations
- explanation of the properties and structures of elements and compounds with the aid of an atomic model or the periodic table

Living nature and society

- photosynthesis and combustion; energy sources
- oxidation reactions and reaction products of organic compounds such as alcohols and carboxylic acids, and the properties and uses of these products
- hydrocarbons, the petroleum-refining industry, and its products
- carbohydrates, proteins, and lipids; their composition and importance as nutritional substances and industrial raw materials
- washing and cosmetic materials; textiles

FINAL-ASSESSMENT CRITERIA FOR A GRADE OF 8

The pupils will

- know how to work safely, individually and in a group, according to the instructions given
- know how to carry out simple science experiments, for example to investigate the combustion of a substance, the dissolving of a combustion product in water, or the acidity of the aqueous solution formed
- know how to present and interpret the results of their experiments
- know about the cyclical processes of substances and the phenomena those processes give rise to in nature and the environment, these including the carbon cycle, the greenhouse effect, and acidification
- know about the importance of chemical phenomena and applications to the individual and society – for example, the importance of photosynthesis to living nature's energy resources, and the importance of corrosion and protection from corrosion in construction and the metal industry

- know about substances that affect the environment, and their sources, ways of spread, and effects on the well-being of people and nature – heavy metals and fossil-fuel combustion products, for example
- know about different industrial sectors, such as the metal and wood-processing industries, and about their products and importance to everyday life
- know how to interpret product descriptions, to explain the life-cycle of a product, and to make choices as a consumer
- know how to use the proper concepts in describing chemical phenomena and the properties of substances, such as acidity, electrical conductivity, and changes of state
- know how to investigate the properties of substances and use the results in classifying, identifying, and distinguishing among elements and compounds, such as precious and non-precious metals
- know how to describe an atom, chemical bonds, and compounds, using the proper models
- know how to interpret simple reaction equations and write, for example, the equation for the combustion of carbon
- know how to draw conclusions about a substance's reactivity on the basis of electronic structure of the atom or an element's location in the periodic table.