

Natural Science Programme

Aim

The Natural Science Programme aims at providing scientifically based knowledge of the conditions of life and of nature. The programme also aims at developing the ability to use mathematics in the natural sciences and in other areas. An additional aim is to develop the ability to see relationships between the natural sciences and other sciences. The Natural Science Programme primarily lays the foundation for further studies.

Structure and nature of the programme

The basic preconception that nature is understandable is a central assumption of the natural science programme. Developments in mathematics, the natural sciences and technology have radically changed Man's view of the world and the application of knowledge from the natural sciences has contributed greatly to the development of modern society. The natural sciences thus constitute an important part of our culture.

By means of providing broad knowledge and a basis for understanding new scientific findings in many different areas, in addition to the natural sciences, the programme provides a foundation primarily for further studies in the natural sciences and technology in higher education.

Developing a scientific approach is an important part of the programme. In order to develop concepts, pupils need an understanding of inter-relationships, within and between subjects, as well as between theory and reality. Acquisition of knowledge thus builds on the interaction between knowledge acquired through experience and theoretical models. Thinking in terms of models is central to all the natural sciences, as well as other scientific areas. The programme develops an understanding that we perceive scientific phenomena by means of models, often described in mathematical terms. These models are changed and enhanced by the emergence of new knowledge. A historical perspective contributes to illuminating developments that have taken place in the subjects covered by the programme and their importance to society.

Scientific approaches are also developed by means of experiments. These develop the ability to plan and carry out experiments and field studies, make observations in an objective and systematic way, as well as interpret and present results. The programme should also provide the opportunity to apply and evaluate knowledge, reflect over experiences and phenomena in nature and society, as well as train skills in formulating arguments. Exercising creativity, the ability to take initiatives, and problem-solving skills are all essential elements covered by the programme. Interaction between core subjects and programme specific subjects is a condition for the overall coherence of the programme.

Knowledge in the subjects specific to the programme is often used in contexts where the ability to co-operate and express oneself orally and in writing is of great importance. Language is a tool for communication, as well as for reflection and learning. The ability to use Swedish is developed in all the subjects of the programme. Contacts with other countries and cultures are increasing, as a result of, amongst other things, rapid developments in information technology. By means of studies in English and other foreign languages, a foundation is laid for co-operation across national borders and for further studies and working life, as well as for an understanding of other cultural patterns.

Environmental and resource issues are an important part of the programme. Insights into such issues are developed in a natural way in a number of the subjects covered by the programme. This helps to create an overall understanding of these questions and of how environmental issues can be solved through the use of different disciplines in the natural and social sciences, as well as the humanities.

The programme provides good practice in using information technology as a tool for learning and communication in the areas of mathematics, the natural sciences and technical subject areas.

To provide an insight into the conditions of working life and give a practical dimension to the programme, it is possible within the programme to provide workplace training for parts of the programme.

The Natural Science Programme has three national branches: natural sciences, mathematics and computer science, as well as environmental sciences.

The responsibility of the school

The school is responsible for ensuring that pupils on completion of the programme:

have advanced knowledge in the natural sciences and mathematics,

have developed their ability to think critically on the basis of a natural scientific approach,

have the ability to acquire new knowledge and adapt their thinking to new issues concerning the natural sciences, the individual and society,

have expanded their understanding of the role of the natural sciences in the development of society, from both a historical and a future perspective,

are able to apply a scientific working approach based on problem solving methodologies, modelling, experiments and development of theory,

have developed an interest in natural science issues and are able to analyse,

formulate and solve problems with the help of natural scientific methods,

are able to use computers and information technology in a way that strengthens understanding, development of concepts and communication, as well as gain a knowledge of the opportunities and problems provided by information technology,

are able to communicate their knowledge and experiences in speech and writing, as well as have acquired insights into language as a means of learning and developing concepts,

are able to use English in a functional way in speech and writing in the area of the natural sciences and in other contexts,

have acquired an ecological outlook and have an insight into how applications from the natural sciences can be used to create good living conditions and quality of life, which is compatible with sustainable development.

Core subject courses

<i>Subject</i>	<i>Course code</i>	<i>Course</i>	<i>Points</i>
English	EN1201	English A	100
Artistic activities	ESV1201	Artistic activities	50
Physical education and health	IDH1201	Physical education and health A	100
Mathematics	MA1201	Mathematics A	100
Science studies	NK1201	Science studies A	50
Religion	RE1201	Religion A	50
Civics	SH1201	Civics A	100
Swedish	SV1201	Swedish A	100
	SV1202	Swedish B	100
Swedish as a second language	SVA1201	Swedish as a second language A	100
	SVA1202	Swedish as a second language B	100

Common courses

<i>Subject</i>	<i>Course code</i>	<i>Course</i>	<i>Points</i>
Biology	BI1201	Biology A	100
English	EN1202	English B	100

Physics	FY1201	Physics A	100
History	HI1201	History A	100
Chemistry	KE1201	Chemistry A	100
Mathematics	MA1202	Mathematics B	50
	MA1203	Mathematics C	100
	MA1204	Mathematics D	100
Project work	PA1201	Project work	100

Common alternate courses

<i>Subject</i>	<i>Course code</i>	<i>Course</i>	<i>Points</i>
Modern languages	MSPR1201	Modern languages, stage 1	100
	MSPR1202	Modern languages, stage 2	100
	MSPR1203	Modern languages, stage 3	100
	MSPR1204	Modern languages, stage 4	100
	MSPR1205	Modern languages, stage 5	100
	MSPR1206	Modern languages, stage 6	100
	MSPR1207	Modern languages, stage 7	100

Eligible courses

<i>Subject</i>	<i>Course code</i>	<i>Course</i>	<i>Points</i>
Biology	BI1202	Biology B	50
	BI1203	Biology extension	50
Use of computers	DAA1201	Computing	50
Computer technology	DTR1201	Computer communications	100
	DTR1202	IT co-ordination	200
	DTR1203	Local networks A	100
	DTR1204	Local networks B	150
	DTR1205	Operating systems	50
	DTR1206	Personal computers	100
	DTR1207	Programming A	50

	DTR1208	Programming B	50
	DTR1209	Programming C	100
	DTR1210	Web design	100
	DTR1211	Database management	100
English	EN1203	English C	100
Business economics	FE1201	Financing and calculation	50
	FE1202	Business economics A	50
	FE1203	Business economics B	150
	FE1204	Marketing	100
	FE1205	Organisation and leadership	50
	FE1206	Accountancy and taxation	100
	FE1207	Small enterprises A	50
	FE1208	Small enterprises B	100
	FE1209	Export and import	50
	FE1210	International economics	50
Philosophy	FS1201	Philosophy A	50
	FS1202	Philosophy B	50
Physics	FY1202	Physics B	150
	FY1203	Physics - extension	50
Geography	GE1201	Geography A	100
	GE1202	Geography B	50
	GE1203	Geographic information systems	50
History	HI1202	History B	100
	HI1203	History C	100
Physical education and health	IDH1202	Physical education and health B	50
	IDH1203	Ergonomics	50
Chemistry	KE1202	Chemistry B	100
	KE1203	Chemistry - extension	50

Mathematics	MA1205	Mathematics E	50
	MA1206	Mathematics - extension	50
	MA1207	Mathematics - discrete	50
Environmental studies	MKU1201	Building a sustainable society	100
	MKU1202	Environmental studies	100
	MKU1203	Environmental management and auditing	50
	MKU1204	Environmental policy	50
	MKU1205	Environmental technology	50
Multimedia	MUM1201	Multimedia A	100
	MUM1202	Multimedia B	100
	MUM1203	Virtual environments	100
Psychology	PS1201	Psychology A	50
	PS1202	Psychology B	50
	PS1203	Technical psychology	50
Religion	RE1202	Religion B	50
Law	RK1201	Business law	50
	RK1202	Environmental law	50
	RK1203	Law	50
Civics	SH1202	Civics B	100
	SH1203	Civics C	100
Swedish	SV1203	Literature and literary criticism	50
	SV1204	Creative writing	100
	SV1205	Swedish C - oral and written communications	50
Technological development	TEU1201	CAD technology A	50
	TEU1202	CAD technology B	50
	TEU1203	CAD technology C	50
	TEU1204	Design	100

TEU1206	Construction B	100
TEU1207	Technology, man, society	50
TEU1209	Technological development and business enterprise	100
TEU1210	Technical communication	50
