



Stiftsschule
Engelberg

Abbey School Since 1120

Stiftsschule Engelberg Abbey School

Secondary School Curriculum



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German

A: General educational objectives

The objective of German lessons is to educate diligent, conscientious, critical and inquisitive young people in the areas of listening, speaking, reading and writing. This should enable them to use language as a means of expression in the real world and allow their individual personalities to grow and develop alongside cross-cultural understanding.

Lessons in German as a first language teach students to:

- Express themselves and understand others
- Engage with literary works
- Develop criteria for aesthetic evaluation
- Deal with historical and cultural aspects of texts
- Develop a linguistic and cultural identity
- Deal methodically with language in its various manifestations

B: Indicative targets

Knowledge

- Have an understanding of the basic rules of linguistic communication
- Have an understanding of language use in various specialist areas
- Have an understanding of the language of the media
- Understand linguistic change based on selected case studies
- Gain an insight into different periods of literary history
- Understand and know how to classify selected literary works
- Have an understanding of different types of text and their functions
- Have an understanding of methods of textual analysis and the study of literature



Skills

- Have the ability to express themselves orally and in writing in a manner appropriate to the situation
- Apply the rules of the German language correctly
- Communicate in sophisticated standard language
- Use information media
- Classify texts based on their origins
- Interpret literary texts from a variety of perspectives
- Analyse linguistic functions
- Construct sophisticated, logical and effective arguments
- Use language creatively

Attitudes

- A desire to acquire, share and understand information
- A desire to use linguistic functions to develop self-awareness
- Value the uniqueness of language and literature
- A desire to engage with social structures
- Be open to the culture of the past and present, future prospects and utopian visions
- Be open to the aesthetics of methods of linguistic expression
- Understand language as a method of expression that is intertwined with culture while also spanning different cultures



C: General objectives and content

1st and 2nd year Lower School (UG)

General objectives	Contents	
Language		
Acquire an insight into the structure of the language	- Deal with grammar in detail. Syntax: main and subordinate clauses, phrases and attributes. Formal and functional aspects	-
Develop oral language skills	- Pronunciation rules - Reading techniques - Reading aloud - Small presentations	-
Develop writing skills	- Practise and consolidate spelling and punctuation rules - Write stories, reports and argumentative texts	-
Literature		
Gain an understanding of techniques for studying literature	- Acquire tools for analysis of epic, lyrical and dramatic texts, and apply these to selected works	
Develop an awareness of interpretation and evaluation	- Discussion of pupils' own understanding of literary works	



1st and 2nd year Upper School (OG)

General objectives	Contents	
Literature		
Learn about the historical aspect of literature	- Learn the essentials of German literary history by reading selected lyrical, epic and dramatic works that are accessible for secondary school students	-
Refine literary analysis techniques	- Develop tools for studying text genres and different types of texts	
Consolidate an awareness of interpretation and evaluation	- Internal and external approaches to the interpretation of texts - Critical engagement with their own and other interpretations	
Experience literature as a fundamental method of human expression	- Comparisons of texts from different periods and perhaps different countries, e.g. in terms of thematic history	
Deal critically with texts	- Analyse non-fiction texts - Learn to use primary and secondary literature - Quotations and evidence	-
Language		
Deepen insight into the structure of the language	- Determine sentences and phrases according to formal, functional and substantive aspects - Elements of rhetoric and stylistics - Comparison of languages	-
Gain insight into language use	- Verbal and non-verbal communication - Communication models	
Gain insight into changes in the German language	- The history of the German language - Reflection on the phenomenon of linguistic change	-



Develop oral language skills	<ul style="list-style-type: none">- Large presentations- Speaking in accordance with a situation and audience	
Training in written language skills	<ul style="list-style-type: none">- Master punctuation and spelling- Practise writing different types of texts on more sophisticated literary and non-literary themes: argumentative and non-argumentative	



3rd and 4th year Upper School (OG)

General objectives	Contents	
Literature		
Learn about the historical aspect of literature	- Learn about the main elements of German literary history by reading selected challenging epic, dramatic and lyrical works	-
Understand literature in its cultural context	- Selected works of world literature in the context of literary history - Learn to appreciate artistic interpretations of literary texts such as films, musical settings and dramatisations - Learn the criteria of aesthetic evaluation	-
Deal academically with literature	- Primary and secondary literature - Evaluate literature based on defined and personal questions	
Deal creatively with literature	- Dramatic interpretation - Imagine alternative approaches	
Deal individually with literature	- Individual textual reception - Understand and reflect on literature as part of their own biography	



Language		
Deepen insight into the structure of the language	- Selected linguistics topics, e.g. problems of translation, conscious and unconscious linguistic codes	
Polish oral and written language skills	- Present independent interpretations of literary works in front of an audience - Lead discussions - Write different types of text (argumentative, appealing, creative) - Distinguish stylistic layers - Use stylistic devices selectively	-

French

A: General educational objectives

French is one of the four national and official languages of Switzerland. French is of key importance in view of the multilingualism and cultural diversity of our country.

French lessons give secondary school students an insight into the society and culture of French-speaking Switzerland, France and the rest of the French-speaking world. This broadens students' horizons and helps to educate them in how to use speech proficiently and participate in French-speaking culture.

French lessons provide knowledge and skills in the areas of language learning and language reflection, communication, literature and culture. Engagement with language promotes formal awareness and helps to systematise and refine language-related thinking. Training in the four basic skills of communication (listening, speaking, reading, writing) enables students to express themselves freely in the foreign language and interact with people in French. Literature plays a key role in French lessons. In the world of fiction, secondary school students encounter standards and possibilities of human experience and action. This enables them to reflect on their own world, identity and values. Students can also deepen their understanding of current and historical topics from French culture, history and society. A diverse approach to language and literature promotes creativity. French lessons help students to acquire a general aptitude for study.

Good French language skills facilitate better communication, sharing of information, cooperation and mobility in education and work in Switzerland and the French-speaking world.



B: Indicative targets

Knowledge

- Have an in-depth understanding of spoken and written French
- Gain insight into aspects of the literary, historical and cultural development of France and Western Switzerland

Skills

- Learn the four basic communication skills (listening and reading comprehension, oral and written expression)
- Use language creatively
- Understand complex lines of thought and adopt a critical and cohesive position
- Understand works of French literature and provide appropriate and sophisticated commentary

Attitudes

- Strive for correct, sophisticated expression
- Have a desire to use the French language in the classroom and to communicate with people from French-speaking cultural areas
- Enjoy using the French language creatively
- Approach the diversity of the culture and lifestyle of France, Western Switzerland and other French-speaking countries with interest and curiosity



C: General objectives and content

1st and 2nd year Lower School (UG)

General objectives	Contents	
Situation		
<ul style="list-style-type: none">- Deal with everyday situations using simple linguistic means- Give opinions, express feelings, make suggestions, accept and decline- Recount factual details, e.g. items and people	<ul style="list-style-type: none">- Roleplay- Image descriptions- Testimonials- Renarration	
Texts		
<ul style="list-style-type: none">- Have a general and detailed understanding of simple oral and written texts- Write simple sentences- Write short texts- Phonetically correct rendering of simple texts (pronunciation, intonation, reading fluency)	<ul style="list-style-type: none">- Listening and text comprehension exercises- Sentence puzzles, interpretation exercises, illustrated stories, diary entries, letters- Reading exercises, learning by rote and recitation of verses	



Grammar and vocabulary		
<ul style="list-style-type: none">- Develop grammatical knowledge, and expand and deepen knowledge- Consolidate and expand vocabulary- Understand the origin and formation of words	<ul style="list-style-type: none">- Verbs (tenses, reported speech)- Declinable parts of speech- Numbers, times, dates- Interrogative forms- Negative forms- Direct and indirect object pronouns- Infinitive conjunctions	-
Cultural knowledge		
<ul style="list-style-type: none">- Learn about Western Switzerland and other parts of the French-speaking world	<ul style="list-style-type: none">- Texts, songs, audio-visual material	



1st and 2nd year Upper School (OG)

General objectives	Contents	
Situation		
<ul style="list-style-type: none"> - Deal with everyday situations using complex linguistic means - Share and discuss opinions, express different kinds of feelings, express criticism - Recount factual details and comment on them 	<ul style="list-style-type: none"> - Work with area maps - Comments and discussions - Lectures, narration, summaries - Renarration 	
Texts		
<ul style="list-style-type: none"> - Have a general and detailed understanding of simple authentic oral and written texts - Write longer texts - Phonetically correct and meaningful rendering of texts (pronunciation, intonation, reading fluency) 	<ul style="list-style-type: none"> - Text comprehension exercises - Listening comprehension - Audio and video documents - Commentaries, illustrated stories - Reading exercises - Translations - Poems 	
Grammar and vocabulary		
<ul style="list-style-type: none"> - Understand and gain further insight into key grammatical forms and structures - Consolidate and expand vocabulary - Understand the origin and formation of words 	<ul style="list-style-type: none"> - Use present, past and future tenses - Learn and apply the conjugation of verbs in different tenses and moods - Use pronouns, adverbs, adjectives 	-



Cultural knowledge		
- Study the history and culture of the French-speaking area	- Texts, songs, audio-visual materials, recipes, interviews, conversations with French speakers - Internet - Excursions, project days	-



3rd and 4th year Upper School (OG)

General objectives	Contents	
Situation		
<ul style="list-style-type: none">- Understand the main points when clear, standard language is used on familiar topics related to work, school, leisure time, etc.- Cope with most situations likely to arise whilst travelling in a particular language area- Express themselves simply and coherently on familiar topics and areas of personal interest- Recount experiences and events, describe dreams, hopes and goals, and provide concise reasons and explanations for plans and intentions- Recount complex issues and understand specialist discussions	<ul style="list-style-type: none">- Debates and discussions- Image descriptions- Testimonials- Renarration- Summaries- Debates/discussions	



Texts		
<ul style="list-style-type: none">- Read and learn about difficult and complex literary texts and adopt a critical stance- Have a general and detailed understanding of authentic spoken text- Understand and analyse factual details related to current issues and adopt a position- Write various kinds of text	<ul style="list-style-type: none">- Texts from three centuries (novels, novellas, short stories, plays, poems, songs, excerpts)- Listening comprehension (audio and video documents)- Factual texts (newspaper and magazine articles, texts from the internet)- Text comprehension exercises, essays, debates, letters, surveys, interviews, radio plays, dialogues, translations	
Grammar and vocabulary		
<ul style="list-style-type: none">- Develop and consolidate grammatical knowledge- Consolidate and expand vocabulary- Understand the origin and formation of words	<ul style="list-style-type: none">- Application and repetition of key grammatical topics including:<ul style="list-style-type: none">- Nouns, articles, adjectives, pronouns, verbs in different tenses and moods, contextual information, numerals and comma rules- Use of tenses	-
Cultural knowledge		
<ul style="list-style-type: none">- Deal with selected topics relating to French-speaking countries and literary history		



English

A: General educational objectives

English lessons enable students to use language as a means of expression in the real world, allowing their own personalities to unfold and helping to develop an understanding of other cultures. The objective is to educate diligent, conscientious, critical and inquisitive young people who are prepared for global communication, collaboration and mobility. Learning the target language allows students to gain a new perspective on the world, but also encourages them to deal with their own language and cultural identity at the same time, and to develop into open and confident citizens of the world.

English lessons make it easier for students to access real current cultural trends, cultural subjects, and information sources. As English continues to become a *lingua franca*, access is not limited to English-speaking cultures and areas, but also takes into account the global significance of English (especially in the students' own culture).

English teaching creates key linguistic foundations to ensure that students will be able to fulfil subsequent requirements in their study and professional work. The curriculum includes stays in English-speaking regions, exchanges and other forms of contact.

B: Indicative targets

Knowledge

- Have a basic knowledge of the English language in oral and written form (passive and active)
- Study selected literary, social and political phenomena related to the English-speaking world and understand them in their historical context
- Gain insight into the spiritual and cultural world of several English-speaking regions
- Strive to attain standardised target levels (skills according to IB, European Language Portfolio (ELP) reference points, etc.)



Skills

- Learn the four traditional skills of communication (listening and reading comprehension, oral and written expression)
- Apply these skills correctly in a variety of situations
- Develop and apply effective strategies for language acquisition in order to develop independence
- Be able to use electronic media in the foreign language

Attitudes

- Have a desire to attain fluency in the English language
- Actively listen, share ideas and express themselves confidently
- Display openness and curiosity when dealing with linguistic, literary and social phenomena related to the English-speaking world
- Have a desire to develop acquired knowledge and skills
- Be prepared to reflect on their personal linguistic level and develop their own learning strategies



C: General objectives and content

1st and 2nd year Lower School (UG)

General objectives	Contents	
Comprehension/listening		
Be able to follow conversations	- Audio texts, listening and comprehension exercises, age-appropriate films	
Reading/literature		
- Read simple and linguistically simplified English texts - Read aloud with correct pronunciation, intonation and emphasis	- Works of fiction and classic books - Newspaper articles - Textbook material	



Grammar		
Repeat and consolidate basic grammar	<ul style="list-style-type: none">- Brief presentations- Verb tense forms- Progressive forms- Conditional forms- Modal verbs- Coordinating conjunctions- Simple forms of adjectives and adverbs- The gerund- Nouns- Pronouns- Question tags	
Vocabulary		
<ul style="list-style-type: none">- Expand basic vocabulary- Paraphrase and explain terms in English	<ul style="list-style-type: none">- Describe themselves, talk about their interests, give personal information- Celebrations, public holidays and traditions- Occupations- Sightseeing attractions- Media and culture- Useful expressions	
Speaking		
<ul style="list-style-type: none">- Take part in discussions- Respond spontaneously, fluently, appropriately and articulately in everyday situations- Refine pronunciation, intonation and emphasis	<ul style="list-style-type: none">- Discussions- Skype sessions with native speakers- Description of images	



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Writing		
- Write about their own experiences and age-appropriate topics - Express themselves appropriately on a given subject	- Guided writing	-
Social skills		
Learn about standards of conduct specific to a certain culture	- Roleplay, texts about behaviours specific to a certain culture	



1st and 2nd year Upper School (OG)

General objectives	Contents	
Comprehension/listening		
- Consolidate listening comprehension - Understand regional variations	- Audio texts, listening and comprehension exercises, age-appropriate films, media	
Reading/literature		
Read simple and linguistically simplified authentic texts Practise reading aloud with correct pronunciation, intonation and emphasis	- Works of fiction and classic books - Newspaper articles - Textbook material	
Grammar		
Expand basic grammar, learn about style and nuances of use	- Simple conditional forms, the passive voice and reported speech - Adverbs - Alternatives - Conjunctions - Sequence words (first, then, etc.)	
Vocabulary		
- Expansion through word forms - Paraphrase terms in English and explain them at a higher level	- More sophisticated word games	-



Speaking		
<ul style="list-style-type: none">- Take part in and lead discussions- Respond spontaneously, fluently, appropriately and articulately in everyday situations- Refine pronunciation, intonation and emphasis	<ul style="list-style-type: none">- Discussions- Skype sessions with native speakers- Description of images	
Writing		
<ul style="list-style-type: none">- Write about age-appropriate topics- Express themselves in detail on a given topic	<ul style="list-style-type: none">- Extensive summaries- Creative writing- Different types of text (reports, essays, articles, etc.)- Dictation from listening comprehension	
Social skills		
Learn and practise standards of conduct	<ul style="list-style-type: none">- Research social topics- Take part in excursions with English-speaking guides (museums, student meetings, etc.)- Films	-



3rd and 4th year Upper School (OG)

General objectives	Contents	
Comprehension/listening		
<ul style="list-style-type: none"> - Consolidate listening comprehension - Understand natural spoken language variants 	<ul style="list-style-type: none"> - Authentic audiovisual texts - Exchange and discussion via Skype - Podcasts, theatre visits, films 	
Reading/literature		
<ul style="list-style-type: none"> - Challenging texts, original texts - Interpret texts and understand them in their historical and sociocultural context 	<ul style="list-style-type: none"> - Original texts from a variety of English-speaking countries - Authentic media texts 	-
Grammar		
<ul style="list-style-type: none"> - Be familiar with nuances of style and use - Repetition of key grammatical topics 	<ul style="list-style-type: none"> - Grammar book (exercise book), ad hoc grammar topics in problem areas 	-
Vocabulary		
Expansion and refinement	<ul style="list-style-type: none"> - Word families 	
Speaking		
<ul style="list-style-type: none"> - Take part in and lead discussions - Respond spontaneously, fluently, appropriately and articulately in everyday situations 	<ul style="list-style-type: none"> - Skype sessions with native speakers - Discussions - Presentations - Debates 	



Writing		
<ul style="list-style-type: none">- Write longer essays- Master various text forms	<ul style="list-style-type: none">- Essays, discussion essays, interpretation of course texts, creative writing- Extended essay	-
Social skills		
<ul style="list-style-type: none">- Experience and practise standards of conduct on a trip abroad	<ul style="list-style-type: none">- Stay in an English-speaking country- Films- Theatre visit	



Mathematics

A: General educational objectives

Mathematics lessons teach precise thinking and the capacity for abstraction. They instil accuracy, precise use of language, and objectivity. Mathematics encourages perseverance and stimulates creativity. Mathematics lessons encourage students to have confidence in their own thinking and independence when coming to a conclusion.

Mathematics is a key tool for describing scientific processes. It plays an important role in acquiring knowledge about our environment. The intellectual tools developed in mathematics lessons facilitate a deeper insight into the sciences and thus a key component of our world.

Dealing with the ideas and history of mathematics makes us aware of the great intellectual achievements of which humans are capable without utilitarian thinking and speculation. Mathematics lessons encourage a sense of the aesthetic and promote enjoyment of intellectual work.

Mathematics teaching lays foundations and promotes the skills and attitudes which are increasingly required for the study of science, technology, economics and social science. It stimulates interest and generates an understanding of science and technology.

B: Indicative targets

Knowledge

- Have an understanding of basic mathematical concepts, results and methods of elementary algebra, analysis, geometry and stochastics
- Know about the typical application of mathematics in other areas
- Have an understanding of basic mathematical proofs and methods of proof



Skills

- Master technical and formal language and key computational techniques
- Comprehend, mathematise and resolve problems
- Represent mathematical concepts correctly, both orally and in writing
- Apply basic methods of proof
- Use IT resources and assess their possibilities and limitations
- Exploit the capabilities of the pocket calculator in a targeted manner

Attitudes

- Approach mathematics impartially and consider its strengths and limitations
- Practise the art of solving even the most difficult tasks through persistent and imaginative debate, in groups and alone
- Be open to the use of different tools and weigh up their pros and cons
- Be prepared to establish connections with other disciplines in which mathematical concepts and methods are useful



C: General objectives and content

1st year Lower School (UG)

General objectives	Contents	
Algebra		
<ul style="list-style-type: none">- Learn how to deal correctly with quantities, rational numbers, sizes and variables, and perform calculations- Expand knowledge and confidence in dealing with terms- Know and understand basic functions	<ul style="list-style-type: none">- Quantities- Operations- Divisibility- Prime numbers- Fractions- Term conversions- Functions (definition and representation of functions, proportionality, straight lines, anti-proportionality, hyperbola)	
Geometry		
<ul style="list-style-type: none">- Know and apply the basic concepts of plane and space geometry- Learn about the geometric background of everyday situations- Perform and describe simple design tasks	<ul style="list-style-type: none">- Shapes- Geometric figures (mirroring of axes, inversion, congruent shapes)- Distance problems in triangles (inner circle, outer circle, triangle heights, centre of the triangle)- Area and perimeter of plane figures (parallelogram, triangle, trapezium, polygon)	-



2nd year Lower School (UG)

General objectives	Contents	
Algebra		
<ul style="list-style-type: none">- Learn strategies for solving equations and inequalities (algebraic, numeric, graphic)- Understand and solve simple textual exercises	<ul style="list-style-type: none">- Square roots (definition and properties, square-root function, terms with square roots)- Equations and inequalities (solving, word problems)- Polynomials (addition, subtraction, multiplication, division of polynomials, factorisation)- Fractions (reducing, expanding, adding, subtracting, multiplying, dividing, compound fractions, equations with fractions)	
Geometry		
<ul style="list-style-type: none">- Understand geometric theorems and proofs- Recognise and apply methods for calculating figures and bodies- Experience the beauty of geometric shapes	<ul style="list-style-type: none">- Right-angled triangle (Pythagoras)- Circle (circumference and area, Pi (π), arc length and sector area)- Similarity (intercept theorems)- Volumes and surfaces of solids (cuboids, prisms, pyramids, cylinders, cones, spheres)	-



1st year Upper School (OG)

General objectives	Contents	
Geometry		
Learn how to perform calculations on right-angled triangles and other triangles	- Trigonometry (in right-angled triangles, other triangles, graphs of trigonometric functions)	-
Algebra		
<ul style="list-style-type: none">- Transform expressions confidently- Translate everyday tasks into the language of algebra and solve them- Learn strategies for solving important types of equations and systems of equations	<ul style="list-style-type: none">- Equations and inequalities (equations with parameters, word problems, squares and square roots, transforming square root expressions, root equations)- Systems of linear equations- Powers- Quadratic equations	



2nd year Upper School

General objectives	Contents	
Algebra		
<ul style="list-style-type: none"> - Recognise, describe, show and interpret functional relationships - Know the properties of fundamental functions - Be able to deal precisely with the notion of function - Understand exponential relationships 	<ul style="list-style-type: none"> - Functions and their graphs (straight lines, parabola, inverse functions) - Logarithms and logarithmic function (laws of logarithms, graphs of logarithmic functions, logarithms in applications) - Exponential function (graphs of exponential functions, exponential growth and decay) 	
Combinatorics		
Combinatorics	<ul style="list-style-type: none"> - Permutations (with and without repetitions) - Variations (with and without repetitions) - Combinations (with and without repetitions) 	
Stochastics		
<ul style="list-style-type: none"> - Learn about the possibilities and limitations of stochastic modelling - Understand and apply the basic principles of the theory of probability 	<ul style="list-style-type: none"> - Descriptive statistics (mean, median, standard deviation) - Theory of probability (random experiments, conditional probability, expected value, urn model, with and without replacement, binomial distribution) 	-



3rd year Upper School (OG)

General objectives	Contents	
Calculus		
<ul style="list-style-type: none">- Study functions and their properties as a key area of calculus- Learn about the limit value as a basic principle of calculus- Study different interpretations of the derivative- Learn about issues surrounding infinitesimal calculus. Apply findings to selected functions- Learn about different interpretations of the definite integral- Acquire more in-depth knowledge of spatial perception	<ul style="list-style-type: none">- Functions- Limit values- Introduction to differential calculus (derivation, derivative function, differentiability and continuity, monotony)- Investigation of rational functions (curve sketching, extreme value problems)- Integral calculation (calculation of surface areas, fundamental theorem of differential and integral calculus, of volumes)- Continuation of differential calculus (product, quotient, and chain rules, investigation of rational functions)	-



4th year Upper School (OG)

General objectives	Contents	
Vector geometry		
<ul style="list-style-type: none"> - Deal confidently with vectors - Represent spatial problems graphically and solve them using vector geometry - Recognise geometric situations, describe them using algebra and process them mathematically - Consolidate plane and space geometry - Learn how to determine the length, distance, angle and position requirements of lines and planes in space 	<ul style="list-style-type: none"> - Vectors (scalar product, angle formula, vector product, area formula) - Linear equation (equation parameters, mutual position of straight lines, distance from a point to a straight line) - Plane equation (coordinate equation, straight line and planes: piercing point, angle of inclination, distance from a point to a plane) 	
Preparation for the International Baccalaureate (IB)		
<ul style="list-style-type: none"> - Be familiar with the special syllabus of the IB, which is usually not part of the Matura examination 	<ul style="list-style-type: none"> - Simple calculations using matrices - Special features of trigonometric functions 	-



Development of knowledge and preparation for the Matura examination		
- Stochastics (study and know how to apply the Gaussian bell curve as the most important distribution function)	- Gaussian bell curve - Significance tests	-
- Calculus (gain more in-depth knowledge of integral calculus and apply it to complex problems)	- Exponential functions - Logarithmic functions - Mixed tasks	



Biology

A: General educational objectives

The subject of biology encourages students to adopt a conscious and sophisticated approach to nature and its variety of life forms. Dealing with living organisms and ecological communities should stimulate curiosity, introduce the joy of discovery, and allow students to develop a sense of responsibility towards nature and appreciate its beauty.

Biology lessons encourage an understanding of nature and the ability to identify the relationships and interactions between various organisms and ecological communities, and to understand the consequences of human intervention. Students should realise that the natural environment must be preserved, and that this requires responsible action on a personal, political and economic level.

The necessary skills are acquired through basic scientific working methods such as the study of literature, accurate observation, experimentation and critical assessment. The latest scientific findings are constantly incorporated into lessons.

Biology lessons use models to teach students about the complexity of biological phenomena. Students develop their own concepts, with the aim of encouraging them to acquire knowledge.

Dealing with historical discoveries in biology supports critical reflection on the acquisition of scientific knowledge.

Biology lessons help students to develop a viewpoint on existential questions regarding nutrition, sexuality, illness, ageing and death, and questions of lifestyle.

Through diverse and appropriate forms of teaching, biology encourages key social skills (e.g. cooperation, teamwork, solidarity, an ability to deal with conflict and criticism, tolerance, objectivity, discussion skills). It also promotes personal skills such as motivation to learn and achieve, efficient working methods, perseverance, reliability, independence, diligence, responsibility, creativity, and an ability to reach ethical judgements.



B: Indicative targets

Knowledge

The objective of biology lessons is not so much to obtain detailed knowledge, but to gain an insight into the major connections in the natural world. These include the following key thematic areas:

- The diversity of organisms (with a certain level of recognition of form)
- The characteristics of living beings such as metabolism, reproduction, growth, development, behaviour, information processing, molecular and cellular structure
- The connections between general and applied ecology
- Heredity and evolution

Skills

The intention is not solely to teach the findings of biological research, or even knowledge. The aim is for students to also develop their own questions, consider strategies and formulate explanations.

These include the following key thematic areas:

- Discover, observe and document circumstances and processes
- Collect and classify: compile classification and differentiation criteria (e.g. homology and analogy); determine forms
- Use optical, electronic and other auxiliary devices
- Develop working hypotheses
- Responsibly plan and perform and useful experiments on living organisms. Record the experiments (graphically and in writing) and carry out statistical analysis
- Critically examine and evaluate scientific statements, come to a judgement, and criticise methodology
- Illustrate biological phenomena using models
- Understand simple scientific texts



Attitudes

A biological perspective is necessary in today's society. This involves comparative system analysis and thinking in terms of genetics and evolution. A biological perspective should foster ethically responsible action that has an influence on personal, political and economic decision-making processes. Students should gain both a respect for life and a fascination for its processes, whilst always remembering that mankind is part of nature.

Students are prepared

- Deal comprehensively with living natural phenomena on an ongoing basis.
- Engage in causal, interlinked, comparative system analysis and thinking in terms of genetics and evolution.
- Strive for the wellbeing of people and their environment through critical analysis of their own views.
- Provide independent stimulus for finding meaning in and shaping their personal lives.



C: General objectives and content

1st year Lower School (UG)

General objectives	Contents	
<ul style="list-style-type: none">- Learn about the stages of scientific discovery- Acquire the basic principles of the zoology of vertebrates	<ul style="list-style-type: none">- Introduction to biology: working methods in biology and science teaching- Vertebrates: specific aspects of the systematics, anatomy, physiology, reproductive and developmental biology and ecology of fish, amphibians, reptiles, birds and mammals	-
<ul style="list-style-type: none">- Discover the diversity of native species of birds and recognise the threat to their existence	<ul style="list-style-type: none">- Ecology of selected species of birds- Identification of species of native birds	-



2nd year Upper School

General objectives	Contents	
<ul style="list-style-type: none"> - Describe the characteristics of living beings - Differentiate between the five kingdoms of life - Understand the classification of living beings 	<ul style="list-style-type: none"> - Introduction to biology: monera, protists, fungi, plants and animals - Introduction to taxonomy 	
<ul style="list-style-type: none"> - Recognise the cell as the smallest functional unit of a living being - Establish similarities and differences between cells in plants and animals - Describe the evolutionary process from single-cell to multi-cell organisms - Gain an understanding of the cellular structure of living beings 	<ul style="list-style-type: none"> - Cell biology: the cell, its organelles and their functions in a photographic image and in an electron microscope image. Prokaryotic, plant and animal cells. Cell growth and cellular differentiation, tissue. Cell cycle and the phases of mitosis 	
<ul style="list-style-type: none"> - Gain an overview of the most important animal phyla - Recognise the importance of invertebrates as beneficial organisms and pests 	<ul style="list-style-type: none"> - Zoology: the anatomy and biology of selected representatives of various animal phyla, sponges, coelenterates, flatworms and nematodes, annelids and arthropods 	-
<ul style="list-style-type: none"> - Be familiar with the structure of flowering plants - Describe the function of a variety of plant organs - Gain an insight into the diversity of flowering plants 	<ul style="list-style-type: none"> - Botany: the structure and function of roots, stems and leaves. Flower structure, pollination and fertilisation, selected flowering plants, botanical identification key 	-



3rd and 4th year Upper School (OG)

General objectives	Contents	
<ul style="list-style-type: none">- Be familiar with key statistical parameters- Perform simple statistical comparisons of average values- Differentiate between correlation and causation	<ul style="list-style-type: none">- Statistics: collection of biological data, presentation of samples, t-test, graphical representation of correlations	
<ul style="list-style-type: none">- Learn about cell biology in greater depth- Have an understanding of the structure and importance of biological membranes- Describe key cellular mechanisms	<ul style="list-style-type: none">- Cell biology: structure of biological membranes, function of membrane proteins, active and passive transport in membranes, endocytosis, exocytosis and vesicular transport, diffusion and osmosis, plasmolysis	
<ul style="list-style-type: none">- Learn about the structure and function of key cell molecules- Describe the importance of enzymes in metabolic processes- Recognise important metabolic processes	<ul style="list-style-type: none">- Biochemistry: simple chemical elements and water, structure and function of carbohydrates, proteins and fats. Enzymes and enzyme activity, cellular respiration, photosynthesis	-
<ul style="list-style-type: none">- Learn about the structure of DNA and its replication- Gain an understanding of the basic principles of protein biosynthesis	<ul style="list-style-type: none">- Molecular genetics: the structure of DNA and its replication, transcription and translation. The genetic code	-



<ul style="list-style-type: none">- Learn that chromosomes are carriers of genetic information- Explain how features are passed down to the next generation- Describe the process of meiosis- Apply Mendel's laws and present a schematic representation and analysis of heredity- Gain an understanding of the genetic basis of human features and hereditary diseases	<ul style="list-style-type: none">- Classical genetics: chromosome theory, genes, alleles, the genome, meiosis. Heredity and Mendel's laws, selected topics of human genetics, pedigree analysis	
<ul style="list-style-type: none">- Explain the energy flow in ecosystems- Recognise the influence of environmental factors on populations- Recognise mankind's impact on the destruction of natural habitats and the biosphere	<ul style="list-style-type: none">- Ecology: ecological communities and ecosystems- Populations. Trophic levels in food chains and food webs. Carbon cycle. Greenhouse effect	-
<ul style="list-style-type: none">- Gain an understanding of the principles of natural selection in order to explain evolutionary processes- Describe the evolution of man	<ul style="list-style-type: none">- Evolution: natural selection, evidence for evolution, the evolution of man	



<ul style="list-style-type: none">- Describe nutrition and digestion in relation to energy metabolism and health- Recognise the importance of respiration and blood circulation for energy metabolism- Gain an understanding of how the immune system fights diseases	<ul style="list-style-type: none">- Health and physiology: nutrition and digestion- Blood and blood circulation. Lungs, respiration and gas exchange- The structure and function of the immune system using HIV/AIDS as a case study	
<ul style="list-style-type: none">- Learn how bodily functions are controlled by the nervous and endocrine systems- Described the basic functional mechanisms of neurons- Recognise the hierarchy of the endocrine system using specific examples	<ul style="list-style-type: none">- Nervous system and endocrine biology: structure and function of the nervous system and motor neurons. Resting and action potential. Synapses. Homeostasis. Temperature regulation. Blood sugar regulation (including diabetes type I and II). Hormonal regulation of the menstrual cycle	-



Geography

A: General educational objectives

Geography examines the spatial layout of our entire world. The subject involves elements of scientific and humanities-related thinking, and therefore combines both disciplines. It also promotes the recognition of connections and encourages students to deal with topics on an interdisciplinary basis. Geography lessons provide students with an insight into how living requirements, norms and attitudes are influential in shaping the space we live in. This should encourage students to adopt a responsible approach to the environment in which they live. They learn to experience a landscape in its entirety and analyse it by applying geographical methods and skills. They should gain an understanding of the interaction and mutual influence of man and nature. They learn how to measure and assess changes to the living environment. Geography lessons also help to foster an understanding of the characteristics and problems faced by other cultures and regions, and thus contribute to a sense of responsibility and solidarity with others.

B: Indicative targets

Knowledge

- Develop topographical skills and a knowledge of specialist cartography terminology in order to interpret and classify current events in geographical terms
- Learn about features of the landscape and their influence on shaping the space around us
- Learn about the natural, economic, social and cultural aspects of different areas
- Learn about the causes and effects of the process of landscape change and environmental change



Skills

- Become accustomed to using geographic information resources (in particular maps, texts, graphics, aerial photographs and satellite images)
- Develop the ability to collect and classify geographical information based on first-hand experience (excursions, project weeks) or secondary sources
- Interpret, analyse, evaluate and present data
- Gain an understanding of generalisation and problem-solving techniques (models, scenarios)
- Recognise competing uses of the living environment and adopt a viewpoint

Attitudes

- Be inquisitive and open to other people and cultures
- Have a desire to develop a sophisticated relationship to the natural and landscaped environment
- Be prepared to question their own spatially relevant attitudes and modes of behaviour, and to develop different strategies and assess their consequences



C: General objectives and content

1st and 2nd year Lower School (UG)

General objectives	Contents	
An overview of Switzerland - Learn about details of the types of landscapes in Switzerland - Learn how to use maps	- Alps, Central Plateau, Jura mountains - National maps	-
An overview of Europe - Recognise and describe natural cultural geographic features of Southern, Western, Northern, Central and Eastern Europe taking into account specific spatially relevant elements	- Southern Europe: climate, cultural landscapes - Western Europe: agriculture, industrial landscapes, border regions - Northern Europe: Gulf Stream, landscapes formed by glaciers - Central Europe: heavy industry - Eastern Europe: Karst landscapes, the Balkans	-
An overview of the earth - Recognise and describe the natural and cultural geographic features of North America, South America, Asia and Australia - Understand and describe the vegetation and climate zones of Africa	- Geographical graticule, continents, oceans - North America: climate, economy - South America: the Amazon, altitudinal belts - Asia: Siberia, Chinese planned economy, earthquakes, tsunamis, monsoons, Asian religions - Africa: climate and vegetation zones - Australia: cities, the outback	-



2nd year Upper School

General objectives	Contents	
Basic principles of geography - Learn about and understand geofactors and landforms - Understand the processes that lead to their formation - Recognise and be able to apply features of landscape types	- Basic concepts of topography, weather and climate, water, soil, vegetation, coastal and river morphology, glacial traces, tides and ocean currents	-
Geomorphology and geology - Understand the earth's key endogenous and exogenous forces - Show their impact on mankind's living environment	- Basic concepts of plate tectonics, mountain building, volcanism, earthquakes - Earth history, petrography and mineralogy - The geology of Switzerland	-
Economic geography - Learn about the world's major commercial goods and economic zones - Understand economic relationships	- Trade flows, location issues, interdependencies - Exploitation of the oceans - Economic policy	-



3rd and 4th year Upper School (OG)

General objectives	Contents	
Population growth: explain the causes and effects of population distribution	- Distribution and development of the earth's population	-
Record inequalities and features of different countries	- Regional and global inequalities	-
Case studies of ecology and sustainability: learn about the significance of water	- The significance of water and air	-
Case studies on the consumption of raw materials: consumption of petroleum products, evaluation of our ecological footprint	- Global resource utilisation	-
Fieldwork: learn about geographical issues with spatial consequences	- Agriculture, industry, services, transport and energy	-
Choice of subject: learn about and assess the interaction between mankind and the environment	Students choose two out of four topics: - Hydrology - Leisure, sport and tourism - Food - The urban environment	-



Philosophy / Theory of Knowledge (ToK)

A: General educational objectives

The objective of philosophy lessons is to help students to develop the ability and willingness to engage independently, critically and self-critically in dialogue with others - including key thinkers from the past and present

- Reflect on what we, communities and societies regard as real or illusory, worthy or unworthy, and discuss what should be considered as such
- Consider the consequences of our assumptions about reality and the value of our actions
- Reflect on personal experiences in life and as part of the school curriculum and establish connections between school subjects and independent thoughts, feelings and actions

Students should be encouraged to realise that even sophisticated reasoning and explanation and well-balanced actions remain open to question.

B: Indicative targets

Knowledge

- Become familiar with basic philosophical concepts and distinctions
- Learn about key philosophical problems, proposed solutions and methods of argumentation
- Recognise that knowledge, roles, norms and values can vary depending on the social, cultural and historical context



Skills

- Learn how to establish and defend their own opinions in an argument; understand and assess arguments for their validity, revise their own opinions and withstand criticism
- Be able to clarify concepts and apply them correctly; show correlation in a conceptually clear and logically correct manner

Attitudes

- Be prepared to question things and events, opinions and mentalities
- Always look beyond the given and search for information and suggestions everywhere, even in the imagination
- Acknowledge that mankind raises important questions that cannot be resolved by science, and make room for these questions in their own thinking
- Not surrender to difficult problems, but rather attempt to investigate them through persistent intellectual work
- Ensure that their own and other thinking is accurate and has intellectual probity
- Be prepared to engage in dialogue as a way of searching for the truth and as a moment of personal development, which requires honesty and mutual respect
- Understand their own intellectual thinking as a condition of personal freedom, and public debate as a condition of political freedom, and defend both



C: General objectives and content

3rd and 4th year Upper School (OG)

General objectives	Contents	
<ul style="list-style-type: none">- Be in a position to critically analyse claims to truth- Formulate existential questions that arise from everyday life and provide possible answers- Learn about key philosophical views from the past and present and understand them as a potential response to existential questions- Learn about philosophical views on various areas of knowledge	<ul style="list-style-type: none">- Definitions of truth and knowledge- Distinguish between deductive and inductive arguments- Different methods of perception (sensory experience, reason, emotion, language)- Existential questions in various fields of knowledge- Various branches of philosophy: ethics, political philosophy, epistemology, metaphysics, aesthetics	-



Creativity, Action and Service (CAS)

The nature of creativity, action and service

(Creativity, action, service guide, 2008, p. 3)

Creativity, action, service (CAS) is at the heart of the Diploma Programme. It is one of the three essential elements in every student's Diploma Programme experience. It involves students in a range of activities alongside their academic studies throughout the Diploma Programme. The three strands of CAS, which are often interwoven with particular activities, are characterized as follows.

Creativity

Arts, and other experiences that involve creative thinking.

Action

Physical exertion contributing to a healthy lifestyle, complementing academic work elsewhere in the Diploma Programme.

Service

An unpaid and voluntary exchange that has a learning benefit for the student. The rights, dignity and autonomy of all those involved are respected.

CAS enables students to enhance their personal and interpersonal development through experiential learning. At the same time, it provides an important counterbalance to the academic pressures of the rest of the

Diploma Programme. A good CAS programme should be both challenging and enjoyable, a personal journey of self-discovery. Each individual student has a different starting point, and therefore different goals and needs, but for many their CAS activities include experiences that are profound and life-changing.

For student development to occur, CAS should involve:

- real, purposeful activities, with significant outcomes
- personal challenge—tasks must extend the student and be achievable in scope
- thoughtful consideration, such as planning, reviewing progress, reporting
- reflection on outcomes and personal learning.

All proposed CAS activities need to meet these four criteria. It is also essential that they do not replicate other parts of the student's Diploma Programme work. Concurrency of learning is important in the Diploma Programme. Therefore, CAS activities should continue on a regular basis for as long as possible throughout the programme, and certainly for at least 18 months. Successful completion of CAS is a requirement for the award of the IB diploma. CAS is not formally assessed but students need to document their activities and provide evidence that they have achieved eight key learning outcomes.

Aims (Creativity, action, service guide, 2008, p. 5)



Within the Diploma Programme, CAS provides the main opportunity to develop many of the attributes described in the IB learner profile. For this reason, the aims of CAS have been written in a form that highlights their connections with the IB learner profile.

The CAS programme aims to develop students who are:

- reflective thinkers—they understand their own strengths and limitations, identify goals and devise strategies for personal growth
- willing to accept new challenges and new roles
- aware of themselves as members of communities with responsibilities towards each other and the environment
- active participants in sustained, collaborative projects
- balanced - they enjoy and find significance

Learning outcomes (Creativity, action, service guide, 2008, p. 5-6)

Learning outcomes are differentiated from assessment objectives because they are not rated on a scale. The completion decision for the school in relation to each student is, simply, —Have these outcomes been achieved?

As a result of their CAS experience as a whole, including their reflections, there should be evidence that students have:

- increased their awareness of their own strengths and areas for growth

They are able to see themselves as individuals with various skills and abilities, some more developed than others, and understand that they can make choices about how they wish to move forward.

- undertaken new challenges

A new challenge may be an unfamiliar activity, or an extension to an existing one.

- planned and initiated activities

Planning and initiation will often be in collaboration with others. It can be shown in activities that are part of larger projects, for example, ongoing school activities in the local community, as well as in small student-led activities.

- worked collaboratively with others

Collaboration can be shown in many different activities, such as team sports, playing music in a band, or helping in a kindergarten. At least one project, involving collaboration and the integration of at least two of creativity, action and service, is required.

- shown perseverance and commitment in their activities

At a minimum, this implies attending regularly and accepting a share of the responsibility for dealing with problems that arise in the course of activities.

- engaged with issues of global importance

Students may be involved in international projects but there are many global issues that can be acted upon locally or nationally (for example, environmental concerns, caring for the elderly).



- considered the ethical implications of their actions

Ethical decisions arise in almost any CAS activity (for example, on the sports field, in musical composition, in relationships with others involved in service activities). Evidence of thinking about ethical issues can be shown in various ways, including journal entries and conversations with CAS advisers.

- developed new skills

As with new challenges, new skills may be shown in activities that the student has not previously undertaken, or in increased expertise in an established area.

All eight outcomes must be present for a student to complete the CAS requirement. Some may be demonstrated many times, in a variety of activities, but completion requires only that there is **some** evidence for every outcome.

This focus on learning outcomes emphasizes that it is the quality of a CAS activity (its contribution to the student's development) that is of most importance. The guideline for the minimum amount of CAS activity is approximately the equivalent of half a day per school week (three to four hours per week), or approximately 150 hours in total, with a reasonable balance between creativity, action and service. —Hour counting, however, is not encouraged.

Responsibilities of the student

(Creativity, action, service guide, 2008, p. 8)

Students are required to:

- self-review at the beginning of their CAS experience and set personal goals for what they hope to achieve through their CAS programme
- plan, do and reflect (plan activities, carry them out and reflect on what they have learned)
- undertake at least one interim review and a final review with their CAS adviser
- take part in a range of activities, including at least one project, some of which they have initiated themselves
- keep records of their activities and achievements, including a list of the principal activities undertaken
- show evidence of achievement of the eight CAS learning outcomes.