INTERNATIONAL BACCALAUREATE DIPLOMA PROGRAMME SUBJECT BRIEF MIINA HÄRMA GYMNASIUM

THE IB DIPLOMA PROGRAMME CORE

Made up of the three required components, the DP core aims to broaden students' educational experience and challenge them to apply their knowledge and skills.

THEORY OF KNOWLEDGE (TOK)	EXTENDED ESSAY (EE)	CREACTIVITY, ACTIVITY, SERVICE (CAS)
The aim of TOK is to make students think and reflect critically on how we construct knowledge. The course revolves around the question "How do we know?". During the course, students will learn how to assess sources of knowledge and spot their own biases and perspectives. The curriculum consists of three parts: knowing about knowing, ways of knowing, and areas of knowledge. The first part, knowing about knowing, deals with shared and personal knowledge and exploring knowledge claims. The second part looks at eight ways of knowing – language, sense perception, emotion, reason, imagination, faith, intuition, and memory – and how we use them to gain knowledge. The third part consists of eight areas of knowledge – mathematics, the natural sciences, the human sciences, the arts, history, ethics, religious knowledge systems, and indigenous knowledge systems – and deals with the specific aims and methods of AOK.	The aim of the Extended Essay project is to provide the students with the opportunity to pursue independent research and to develop communication and critical thinking skills. Students select an area of research from Diploma Programme subjects, or in the case of the interdisciplinary world studies essay from two subjects, and become acquainted with the independent research and writing skills expected at university. Through the research process for the extended essay, students develop skills in formulating an appropriate research question, engaging in a personal exploration of the topic, communicating ideas and developing an argument. The essay is supervised by a qualified IB teacher and the upper limit for the extended essay is 4,000 words.	CAS involves students in a range of activities alongside their academic studies. Students will work out an individual plan for their free time activities which suits their lifestyle and meets the seven learning outcomes of CAS. They will plan and undertake different experiences, provide evidence of achieving the learning outcomes. The evidence will be recorded in a blog or a diary as goals and reflections. The activities have to be balanced between the three strands: • Creativity – arts, and other experiences that involve creative thinking. • Activity – physical exertion contributing to a healthy lifestyle, complementing academic work. • Service – an unpaid and voluntary exchange that has a learning benefit for the student. CAS will last at least 18 months and contains several experiences and one CAS project.

GROUP 1
LANGUAGE & LITERATURE

THE ENGLISH A: LANGUAGE AND LITERATURE (STANDARD AND HIGHER LEVEL)

The English A: Language and Literature course aims to enable students to:

- engage with a range of texts, in a variety of media and forms, from different periods, styles and cultures;
- develop skills in listening, speaking, reading, viewing, presenting, performing, and interpretation, analysis and evaluation; communicate and collaborate in a confident and creative way;
- develop sensitivity to the formal and aesthetic qualities of texts, and understanding of relationships between texts and a variety of perspectives, cultural contexts, and local and global issues, and an appreciation of how these contribute to diverse responses and open up multiple meanings;
- develop an understanding of the relationships between studies in language and literature and other subjects; and foster a lifelong interest in and enjoyment of language and literature.

Special attention will be paid to developing thinking, communication, social, self-management and research skills; and exploring in detail the following three areas: Readers, writers and texts; Time and space; Intertextuality: connecting texts.

Students will be expected to compile a learner portfolio, and consider various global issues with the aim of narrowing down to a particular global issue that is important to them, or that they have noticed most strikingly in two works they have studied. The only difference between SL and HL is that HL reads more novel-length books and writes one essay for final assessment that SL does not, and the different parts of the final exam carry different weight.

Language and Literature course is for anybody who needs to work with language in any capacity (especially in the fields of media, law, education, PR, politics, international relations).

THE ESTONIAN A: LANGUAGE (STANDARD AND HIGHER LEVEL)

Ainet õpitakse emakeeles. Kõigile eesti keelt emakeelena kõnelevatele õpilastele on õppeaine kohustuslik. Keskendutakse kirjanduse läbilugemisele ja analüüsimisele. Kahe aasta jooksul käsitletakse mitmeid erinevate kirjanike teoseid erinevatest žanritest.

Standard level (SL) õpilased loevad 9 teost ja *higher level* (HL) õpilased 13 teost. Viimase aasta kevadel tuleb sooritada eksamiks Paper 1, mis tähendab tundmatu teksti analüüsi etteantud aja jooksul. Standard level valib ühe teksti kahest ja HL analüüsib mõlemat. Teine eksam on Paper 2, mis tähendab võrdleva essee kirjutamist loetud teoste põhjal. Lisaks peab higher level kirjutama ühe teose põhjal essee, mille sõnade arv on 1200-1500. Mõlemad, nii SL kui HL, teevad ka ühe esitluse, milles on kasutatud lõike kahest erinevast loetud teosest ja seotud need valitud globaalse kontekstiga.

Hoolimata hindamisülesannetest keskendub see aine kirjandusliku teksti analüüsioskuste arendamisele ja vajalike terminite ning mõistete omandamisele, et suuta mistahes teksti kommenteerida. Õpilane peaks ära õppima teatud hulga võtteid, mis on vajalikud teksti analüüsiks. Arvestada tuleb kindlasti sellega, et raamatuid lugemata seda ainet heade tulemustega on raske lõpetada.

GROUP 2
LANGUAGE AQUISITION

LANGUAGE AB INITIO – FRENCH, SPANISH (STANDARD LEVEL)

The IB DP language ab initio course at Miina Härma Gymnasium is a language acquisition course aimed at students with no prior experience of the target language, or for those students with very limited previous exposure.

During the 2-year course (3 lessons per week) students will develop international-mindedness through the study of target language and culture. The three main communicative skills (receptive, productive and interactive) will be developed throughout the course. Students will be able to communicate in the language they have studied in a range of contexts and for a variety of purposes. They will also develop curiosity, creativity and a lifelong enjoyment of language learning.

The language ab initio syllabus prescribes five main themes such as:

- Identities
- Experiences
- Human ingenuity
- Social organisation
- Sharing the planet

At the end of the course students will be assessed on the basis of their

- writing skills (Paper 1)
- listening/reading comprehension skills (Paper 2)
- speaking and interaction skills (Internal assessment).

LANGUAGE B: FRENCH, GERMAN, RUSSIAN (STANDARD AND HIGHER LEVEL)

The aim of language acquisition course (French B, German B or Russian B) is to provide students with the necessary skills and intercultural understanding to enable them to communicate successfully in environments where the language studied is spoken. In language acquisition course, students further develop their ability to communicate in the target language through the study of the language, themes and texts. Students develop intercultural understandings and the ability to engage globally, and are well – prepared for a future world in which language skills and cultural sensitivities are highly prized.

The course is designed for students with some previous experience of the language (A2 + level). The language acquisition course is provided on two levels: standard level (3 lessons a week) and higher level (5 lessons a week). Higher and standard levels are differentiated by the teaching hours, the depth of syllabus coverage, the required study of literature at higher level (the students read several literary works and develop their ability to understand more demanding texts and to talk about different literary topics), and the level of difficulty and requirements of the assessment tasks and criteria.

Prescribed themes:

- Identities
- Experiences
- Human ingenuity
- Social organisation
- Sharing the planet

The assessments aim to test all students' ability to understand and use the language of study as well as key concepts through learning a language by engaging with its use and meaning within a social framework and through developing receptive, productive and interactive skills in the language of study.

Students will be assessed on their ability to:

- communicate clearly and effectively in a range of situations, demonstrating linguistic competence and intercultural understanding
- use language appropriate to a range of interpersonal and/or cultural contexts
- understand and use language to express and respond to a range of ideas with accuracy and fluency
- organize ideas on a range of topics, in a clear, coherent and convincing manner
- understand, analyse and respond to a range of written and spoken texts.

GROUP 3
INDIVIDUALS & SOCIETIES

HISTORY (STANDARD AND HIGHER LEVEL)

History is an exploratory subject that fosters a sense of inquiry. It is also an interpretive discipline, allowing opportunity for engagement with multiple perspectives and a plurality of opinions. Studying history develops an understanding of the past, which leads to a deeper understanding of the nature of humans and of the world today.

The standard level history course is focused on 20th century wars and authoritarian states, looking into the formation and functioning of such regimes in both Europe and Asia. Special emphasis is placed on war as a common result of the foreign policies of 20th century authoritarian regimes. The course is aimed at providing a comparative view of similar processes occurring at different times and locations, offering an insight into the universal mechanisms behind authoritarianism and aggression. During the course, all students are expected to complete a historical investigation — a 2200 word research paper on a freely chosen topic of interest from world history.

The higher level history course offers an in depth look into China and Japan in the 20th century. As war and authoritarian rule is an integral part of both societies, the higher level course is meant to supplement the standard level course. Therefore, candidates should seriously consider taking both the standard and higher level course when making the choice in favor of studying history.

The history course is open to all candidates with an open and inquisitive mindset. The main prerequisite for studying history at Miina Härma Gymnasium is a willingness to do continuous independent work throughout the two years. This consists mainly of extensive reading, but also essay writing or other practical tasks.

GEOGRAPHY (STANDARD AND HIGHER LEVEL)

The IB DP geography course integrates both physical and human geography, and ensures that students acquire elements of both scientific and socio-economic methodologies.

Geography takes advantage of its position to examine relevant concepts and ideas from a wide variety of disciplines. This helps students develop an appreciation of, and a respect for, alternative approaches, viewpoints and ideas.

Some of the topics we study:

- Extreme environments
- Urban environments
- Population distribution—changing population
- Global climate—vulnerability and resilience
- Global resource consumption and security

The geography course embodies global and International awareness in several distinct ways. It examines key global issues, such as poverty, sustainability and climate change. It considers examples and detailed case studies at a variety of scales, from local to regional, national and international.

During the course, fieldwork will be carried out leading to one written report based on a fieldwork question. This report is known as internal assessment.

Although the skills and activity of studying geography are common to both SL and HL students, the higher level student is required to acquire a further body of knowledge, to demonstrate critical evaluation, and to synthesize the concepts in the higher level extension.

Throughout the course, there is considerable flexibility in the choice of examples and case studies to ensure that Diploma Programme geography is a highly appropriate way to meet the needs of all students. The geography course requires no specific prior learning. No particular background in terms of specific subjects studied for national or international qualifications is expected or required.

GROUP 4
SCIENCES

PHYSICS (STANDARD AND HIGHER LEVEL)

Physics is the most fundamental of the experimental sciences as it seeks to explain the universe itself, from the very smallest particles to the vast distances between galaxies. By studying physics students should become aware of how scientists work and communicate with each other.

Learning physics in the IB Diploma programme at Miina Härma Gymnasium is interesting and enjoyable for various reasons: The lessons usually take place in our school's laboratory, which provides a great environment for class discussions and studying together, as everyone sits around one table, usually in a smaller group. The lab is equipped well, having the necessary equipment for many different types of experiments. The curriculum is up-to-date, giving the students a grasp of the most important topics in physics for further studies in the world's top universities. This is supported by various field trips to places where science is done by professionals, such as CERN and Physicum of Tartu University. Overall, the entire experience is enjoyable, as every student has specifically chosen physics and the learning process is mainly guided by creativity and curiosity.

The core (8 topics) is the same for SL and HL There are 4 additional topics for higher level going broader and deeper into physics than standard level. Higher level physics is recommended for preparation for science and engineering studies. Students must additionally choose one topic from four options (engineering, imaging, relativity, astrophysics) according to their personal interests and future career choice.

BIOLOGY (STANDARD AND HIGHER LEVEL)

Biology is the study of life. The vast diversity of species makes biology both an endless source of fascination and a considerable challenge. Biologists attempt to understand the living world at all levels from the micro to the macro using many different approaches and techniques.

The IB DP biology course at Miina Härma Gymnasium will provide students with activities to promote a deeper understanding of critical concepts in biology. While there are core skills and activities common to both SL and HL students, students at higher level are required to study the options (neurobiology and behavior, biotechnology and bioinformatics, ecology and conservation or human physiology) and some topics in greater depth as well as some additional topics. It is highly recommended that students who would like to further their studies in a medical/biochemical related discipline at university do Biology at HL.

The IB DP biology course covers the following topics:

Standard level (core)	Higher level
Cell biology	Nucleic acids
Molecular biology	Metabolism, cell respiration and photosynthesis
Genetics	Plant biology
Ecology	Genetics and evolution
Evolution and biodiversity	Animal physiology
Human physiology	

Laboratory work forms an integral part of the course. Students have opportunities to design investigations, collect data, develop manipulative skills, analyze results, collaborate with peers and evaluate and communicate their findings. This is supported by various field trips to places where science is done by professionals, such as Tartu University Hospital and Estonian University of Life Sciences.

CHEMISTRY (STANDARD AND HIGHER LEVEL)

Chemistry investigates the properties of matter and the interactions between atoms and molecules. Chemistry is called the central science, because it connects different natural sciences. Based on well-established physical principles, chemistry is crucial for explaining processes in complicated systems in both living organisms and inanimate nature, also enabling the development of applied sciences like medicine or materials science.

Both the core topics and options are common to the SL and HL, but HL studies include additional subtopics, which explore the subject both wider and deeper. HL IB chemistry enables to develop an integrated understanding of the subject and other scientific disciplines, offering also a good preparation for introductory university chemistry courses. Therefore, the course is useful to students, who are interested in a wide range of disciplines, including medicine, pharmacology, earth science, environmental science and materials science.

The 11 main topics of the course give an overview of the properties of atoms and molecules, chemical bonding and structure, thermochemistry, reaction kinetics and equilibrium. Both acid-base type and redox reactions are discussed and a brief overview of organic chemistry is also given during the course. A mandatory part of the course is lab work. Investigations performed during IB chemistry studies do not only consist of following strict procedures, but enable the students to gain first experience with scientific research on a topic that they are interested in. Lab work offers the students an opportunity to develop their creative and critical thinking by designing their own experiments using a wide range of available equipment and if necessary, also to perform additional experiments in the university labs.
The fact that chemistry is the central science bridging physics and biology is also reflected by the available options (materials, biochemistry, energy and medicinal chemistry). This enables the students to gain more knowledge on these topics for their further studies. These options are available for both HL and SL, including expanded content for HL students.

MATHEMATICS: ANALYSIS AND APPROACHES

This course recognizes the need for analytical expertise in a world where innovation is increasingly dependent on a deep understanding of mathematics. This course includes topics that are both traditionally part of a pre-university mathematics course (for example, functions, trigonometry, calculus) as well as topics that are amenable to investigation, conjecture and proof, for instance the study of sequences and series at both SL and HL, and proof by induction at HL.

The course allows the use of technology, as fluency in relevant mathematical software and hand-held technology is important regardless of choice of course. However, Mathematics: analysis and approaches has a strong emphasis on the ability to construct, communicate and justify correct mathematical arguments.

Distinction between SL and HL

Students who choose Mathematics: analysis and approaches at SL or HL should be comfortable in the manipulation of algebraic expressions and enjoy the recognition of patterns and understand the mathematical generalization of these patterns. Students who wish to take Mathematics: analysis and approaches at higher level will have strong algebraic skills and the ability to understand simple proof. They will be students who enjoy spending time with problems and get pleasure and satisfaction from solving challenging problems.

MATHEMATICS: APPLICATIONS AND INTERPRETATION

This course recognizes the increasing role that mathematics and technology play in a diverse range of fields in a data-rich world. As such, it emphasizes the meaning of mathematics in context by focusing on topics that are often used as applications or in mathematical modelling. To give this understanding a firm base, this course also includes topics that are traditionally part of a pre-university mathematics course such as calculus and statistics.

The course makes extensive use of technology to allow students to explore and construct mathematical models. Mathematics: applications and interpretation will develop mathematical thinking, often in the context of a practical problem and using technology to justify conjectures.

Distinction between SL and HL

Students who choose Mathematics: applications and interpretation at SL or HL should enjoy seeing mathematics used in real-world contexts and to solve real-world problems. Students who wish to take Mathematics: applications and interpretation at higher level will have good algebraic skills and experience of solving real-world problems. They will be students who get pleasure and satisfaction when exploring challenging problems and who are comfortable to undertake this exploration using technology.

VISUAL ARTS

The IB DP visual arts course encourages students to explore the limits of contemporary art and voice their opinions about social and political issues in the context of art. Because students can work with a wide range of media (digital art, printmaking, painting, 3D modelling and 3D printing, drawing, sculpting, video, photography etc), they may choose to focus on either traditional art making practices and develop their technical skills, or instead, experiment and play around with conceptual art and ephemeral materials.

During the 2-year course students will try out different roles: they will be the creators, curators, viewers and art critics. Students are expected to submit three things for assessment: a process portfolio; a written comparative study of two artworks; and photos and texts of the student's final exhibition. The difference in SL and HL is in the number of required pages written and artworks created.

The visual arts course is designed for students who want to understand and discover the visual and social systems around us. It is recommended to students wishing to continue their higher education in humanities and everyone who aspires to develop their creative thinking skills.

Source: IBO home page (www.ibo.org)