Canadian School of Milan

IB Diploma Programme

What is the IB Diploma?

The IB Diploma Programme is a comprehensive pre-university two-year curriculum course of study designed for students in the 16 to 19 age range. It is a broad-based two-year course that aims to encourage students to be knowledgeable and inquiring, but also caring and compassionate. There is a strong emphasis on encouraging students to develop intercultural understanding, open-mindedness, and the attitudes necessary for them to respect and evaluate a range of points of view.

The IB Diploma Programme is widely recognised by the world's leading universities. The program is unique in that it is based on no particular national education system, but is a deliberate balance between breadth and the specialisation which is required by many universities.

The Diploma Programme (DP) provides a challenging, internationally focused, broad and balanced educational experience for students aged 16 to 19. Students are required to study six subjects and a curriculum core concurrently over two years. The programme is designed to equip students with the basic academic skills needed for university study, further education and their chosen profession.

Additionally the programme supports the development of the values and life skills needed to live a fulfilled and purposeful life.

A distinguishing characteristic of the DP is a concern with the whole educational experience of each student.
The curriculum framework, and the supporting structures and principles, are designed to ensure that each student is necessarily exposed to a broad and balanced curriculum.

Earning an IB Diploma

DP students complete courses from six subject groups, ensuring a depth and breadth of knowledge and understanding, as well as the completion of a compulsory programme core consisting of three components:

Theory of knowledge (TOK) challenges students to reflect on the nature of knowledge and how we know what we claim to know.

Extended essay (EE) introduces students to the demands and rewards of independent work prior to entering university, requiring them to produce a self-directed piece of research in an area of personal interest.

Creativity, activity and service (CAS) is an experiential learning component where students engage with a wide variety of extracurricular activities, including community service and athletic options.

DP Passing Criteria

To achieve an IB Diploma, candidates must meet the Diploma Programme (DP) passing criteria. The highest score that a candidate can achieve is 45 points. The diploma points are calculated by adding together the grades achieved from each of the six subjects (a grade of 1-7) and the core (up to 3 points). The maximum points of 45 is obtained from 6 (subjects) times 7 (top grade) plus 3 points from the core. Standard level (SL) and higher level (HL) subjects are equally valued in determining the candidate's final points. However, students must earn at least 24 points and have met the conditions listed below:

- A grade has been awarded in all subjects, TOK and the EE.
- A grade of at least a 2 has been awarded in all subjects.
- There are no more than two grade 2s awarded (SL or HL).
- There are no more than three grade 3s or below awarded (SL or HL).
- The candidate has at least 12 points on HL subjects. (For candidates who register for four HL subjects, the three highest grades count).
- Candidates have at least 9 points on SL subjects. (Candidates who register for two SL subjects must be awarded at least 5 points at SL).

The theory of knowledge (TOK) and extended essay (EE) components are awarded individual grades and, collectively, can contribute up to 3 additional points towards the overall diploma score.
Creativity, activity, service (CAS), the remaining element in the DP core, does not contribute to the points total but authenticated participation is a requirement for the award of the diploma.

Course Selection

Students study six subjects concurrently. These include two languages, one subject from individuals and societies, one science, one mathematics subject, and one subject from the arts or another subject from the other groups.
There are also interdisciplinary subjects such as environmental systems and societies (ESS) available to students. At CSM we offer the following subjects:

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
English A	English B	ESS		Maths AA	Visual Arts or Any of the other groups
French A	French B	History	Biology (not chosen this year DP1)	Maths AI (HL not chosen this year DP1)	
Italian A	Italian B	Economics			
Spanish A SSST	Spanish B	Business	Chemistry		
	Spanish Ab Initio		Physics		

Please refer to the Subjects Briefs at the end of this document for additional information.

Bilingual IB Diploma Programme

A bilingual diploma is awarded to candidates who complete and receive a grade 3 or higher in two languages selected from the DP course studies in language and literature.

Students who gain a grade 3 or higher in studies in language and literature and a grade 3 or higher in an individuals and societies or science subject, completed in a different language, will also receive the bilingual diploma.

Advantages

Pursuing an IB Bilingual Diploma offers several valuable benefi ts:

- University Recognition: Many universities require proof of proficiency in the language of instruction for non-native students. The Bilingual Diploma provides reliable evidence of this profi ciency, facilitating smoother admissions. Additionally, universities increasingly value bilingual graduates, and holding a Bilingual Diploma can give applicants a competitive edge.
- Linguistic Versatility: Mastery of multiple languages enhances communication skills and intercultural understanding. Being bilingual can open up career opportunities where multilingual abilities are highly valued.
- Broadened University Options: A Bilingual Diploma allows your child to apply to a wider range of universities that offer programs in both languages. This provides greater flexibility in pursuing their academic interests.

University

The DP is uniquely designed to support all students for success going into, and throughout, university. It is offered in a large number of schools across the world, including private, independent, international, and state-funded schools.
DP graduates are well-equipped to adjust, engage and succeed. They graduate with analytical, writing, communication and presentation skills; research experience; excellent organisation and time management; the ability to approach a topic from multiple perspectives; and a deep understanding of academic concepts. This provides an excellent foundation for them to prosper at their chosen university.
By challenging students to complete their studies across the DP curriculum and demonstrate proficiency through a wide range of internationally best practised assessments, students who earn the IB diploma excel at universities all around the world, regardless of their personal circumstances.

University Counselling

Students are supported throughout their High School journey, to ensure they are aware of the learning pathways available to them. They discover the differences between admission procedures and requirements for worldwide university destinations and are given key tools to research and plan their university applications.

University Counselling activities include:

- Unifrog Access
- University presentations and fairs
- Class sessions
- Individual meetings and support
- Support preparing documents and applications
- Parent and guardian presentations

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Subjects Briefs

Group 1 – Studies in Language and Literature

These courses are designed for students who have experience of using the language of the course in an academic context.

Language A: Language & Literature

A key aim of the Language A: Language and Literature course is to encourage students to question the meaning generated by language and texts, which, it can be argued, is rarely straightforward and unambiguous. Helping students to focus closely on the language of the texts they study and to become aware of the role of each text's wider context in shaping its meaning is central to the course.
The Language A: Language and Literature course aims to develop in students skills of textual analysis and the understanding that texts, both literary and non-literary, can be seen as autonomous yet simultaneously related to culturally determined reading practices. The course is designed to be flexible: teachers have the opportunity to construct it in a way that reflects the interests and concerns that are relevant to their students while developing in students a range of transferable skills. This course comprises three parts, each with a particular focus:

Part 1: Readers, writers and texts - aims to introduce students to the notion and purpose of literature and the ways in which texts can be read, interpreted and responded to.

Type of assessment	Format of assessment	Time (hours)		Weighting of final grade (%)	
		SL	HL	SL	HL
External					
Paper 1: Guided textual analysis	Guided analysis of unseen non-literary passage/passages from different text types.	1.25	2.25	35	35
Paper 2: Comparative essay	Comparative essay based on two literary works written in response to a choice of one out of four questions.	1.75	1.75	35	25
HL essay	Written coursework component: 1,200–1,500 word essay on one literary work or a non-literary body of work studied.				20
Internal					
Individual oral	Prepared oral response on the way that one literary work and one non-literary body of work studied have approached a common global issue.			30	20

Part 2: Time and space - draws attention to the fact that texts are not isolated entities, but are connected to space and time.

Part 3: Intertextuality - connecting texts focus on the connection between and among diverse texts, traditions, creators and ideas.

Distinction between SL and HL
The model for Language A: Language and Literature is the same at SL and HL, but there are signifi cant quantitative and qualitative differences between the levels. In the literature sections SL students are required to study 4 works, whereas HL students are required to study 6.
In the language sections students are generally expected to cover many more texts of all kinds at HL than at SL. Two of the assessment tasks at SL are less demanding than the comparable tasks at HL. HL students submit an essay on one non-literary text or a collection of non-literary texts by one same author, or a literary text or work studied during the course. In contrast, SL students are not required to write this essay. Internal assessment tasks and criteria are the same at SL and at HL.

Group 2 – Language Acquisition

Group 2 features two modern language acquisition courses: language B and language Ab Initio. At CSM, the following languages are offered:

- English (B)
- French (B)
- Italian (B)
- Spanish (B and Ab Initio)

Both language B and language Ab Initio are language courses designed to provide students with the necessary skills and intercultural understanding to enable them to communicate successfully in an environment where the language studied is spoken. This process encourages the learner to go beyond the boundaries of the classroom, expanding an awareness of the world and fostering respect for cultural diversity.

Language B

Language B is a course designed for students with some previous learning of the language. Its main focus is on language acquisition and development of conversational and writing skills, which are developed through the study and use of a range of written and spoken material. The most important aspect of this course is that it represents a challenging educational experience for the student, offering not only the opportunity to learn an additional language but also the means of learning, appreciating and effectively interacting in a culture different from their own. In this respect, intercultural understanding is a major cohesive element of the syllabus.

Language B SL and HL assessment outline		Weighting
External 75%	**Paper 1** (productive skills) One writing task from a choice of three Writing—30 marks	**25%**
	Paper 2 (receptive skills) Separate sections for listening and reading Listening—25 marks Reading—40 marks	 **25%** **25%**
Internal	**Individual oral assessment**	

While learning the target language, the student becomes aware of the similarities and differences between his/her own culture and the target culture. With such awareness, a greater respect for other people and the way in which they lead their lives is fostered.

The language B syllabus approaches the learning of language through meaning. Through the study of core topics and options at both Standard (SL) and Higher Level (HL), as well as two literary works at HL, students build the necessary skills to reach the assessment objectives of the course by broadening their receptive, productive and interactive skills. SL and HL are differentiated by the recommended number of teaching hours, the depth of syllabus coverage, the study of literature at HL and the level of difficulty and demands of assessment and assessment criteria.
The Language B syllabus consists of five themes:

- identities
- experiences
- human ingenuity
- social organisation
- sharing the planet.

Both language B SL and HL students learn to communicate in the target language in familiar and unfamiliar contexts. The distinction between language B SL and HL can be seen in the level of competency the student is expected to develop in receptive, productive and interactive skills.

Spanish AB initio (SL only)
These courses are designed for students who have experience of using the language of the course in an academic context.
The language Ab Initio course is organised around the same fi ve themes of Language B. In relation to these themes, the language Ab Initio course provides students with opportunities to practise, explore and appreciate the language and the culture of the country in which the target language is spoken, as well as to develop intercultural understanding.

Language ab initio SL assessment outline		Weighting
External 75%	**Paper 1** (productive skills) Two written tasks—each from a choice of three Writing—30 marks	**25%**
	Paper 2 (receptive skills) Separate sections for listening and reading Listening—25 marks Reading—40 marks	**25%** **25%**
Internal 25%	**Individual oral assessment** 30 marks	**25%**

The course enables students to develop the appropriate receptive, productive and interactive skills that students can use in a variety of everyday situations.

Group 3 – Individuals & Societies

Economics
Economics is a dynamic social science, forming part of group 3—individuals and societies. The study of economics is essentially about dealing with scarcity, resource allocation and the methods and processes by which choices are made in the satisfaction of human wants. As a social science, economics uses scientifi c methodologies that include quantitative and qualitative elements.

The IB Diploma Programme economics course emphasises the economic theories of microeconomics, which deal with economic variables affecting individuals, firms and markets, and the economic theories of macroeconomics, which deal with economic variables affecting countries, governments and societies. Both are covered in grade 11. These economic theories are not to be studied in a vacuum; rather they are to be applied to real-world issues. Prominent among these issues are fl uctuations in economic activity, international trade, economic development and environmental sustainability. International and Development Economics are covered in grade 12. The economics course encourages students to develop international perspectives, fosters a concern for global issues, and raises students' awareness of their own responsibilities at a local, national and international level. The course also seeks to develop values and attitudes that will enable students to achieve a degree of personal commitment in trying to resolve these issues, appreciating our shared responsibility as citizens of an increasingly interdependent world.
The three pieces of internal assessment encourage students to apply their knowledge and evaluate economic theories using contemporary articles from the published press. As such, all students are asked to subscribe to "The Economist" magazine and read both this and other appropriate publications on a weekly basis.

Distinction between SL and HL

Type of assessment	Format of assessment	Time	Weighting of final grade (%)
External		4 hours 45 mins	80
Paper 1	Extended response paper based on all units of the syllabus	1 hour 15 mins	20
Paper 2	Data response paper based on all units of the syllabus	1 hour 45 mins	30
Paper 3	Policy paper based on all units of the syllabus	1 hour 45 mins	30
Internal			
Portfolio	Three commentaries based on different units of the syllabus (except the introductory unit) and from published extracts from the news media, analysed using different key concepts	20 hours	20

Type of assessment	Format of assessment	Time	Weighting of final grade (%)
External		3 hours	70
Paper 1	Extended response paper based on all units of the syllabus	1 hour 15 mins	30
Paper 2	Data response paper based on all units of the syllabus	1 hour 45 mins	40
Internal			
Portfolio	Three commentaries based on different units of the syllabus (except the introductory unit) and from published extracts from the news media, analysed using different key concepts	20 hours	30

SL and HL students of economics are presented with a common syllabus, with an HL extension in some topics, particularly Theory of the Firm in Microeconomics. The syllabus for both SL and HL students requires the development of certain skills and techniques, attributes and knowledge as described in the assessment objectives of the programme. While the skills and activity of studying economics are common to both SL and HL students, the HL student is required to acquire a further body of knowledge, including the ability to analyse, synthesise and evaluate that knowledge and, perhaps most significantly, to develop quantitative skills in order to explain and analyse economic relationships. These quantitative skills are specifically assessed at HL in paper 3.

Business Management

Business Management is a rigorous and dynamic discipline that examines business decision-making processes and how these decisions impact on and are affected by internal and external environments. It is the study of both the way in which individuals and groups interact in an organisation and of the transformation of resources.

The Diploma Programme Business Management course is designed to develop an understanding of business theory, as well as an ability to apply business principles, practices and skills. The application of tools and techniques of analysis facilitates an appreciation of complex business activities. Through the exploration of six concepts underpinning the subject (change, culture, ethics, globalisation, innovation and strategy), the business management course allows students to develop their understanding of interdisciplinary concepts from a business management perspective. The business management course aims to help students understand the implications of business activity in a global market.

The ideals of international cooperation and responsible citizenship are at the heart of Diploma Programme Business Management. Through the study of topics such as human resource management, organisational growth and business strategy, the course aims to develop transferable skills relevant to today's students.

These include the ability to: think critically; make ethically sound and well-informed decisions; appreciate the pace, nature and significance of change; think strategically; and undertake long term planning, analysis and evaluation. The course also develops subject-specific skills, such as financial analysis.

Difference between HL and SL

- Recommended hours devoted to teaching (240 hours for HL compared to 150 hours for SL)
- Extra depth and breadth required (extension units for HL like Organisational (corporate) culture, Industrial/employee relations, Efficiency ratio analysis and budgets, Crisis and Contingency Planning, Sales Forecasting, etc) Nature of the internal assessment task
- Nature of the examination questions. Although both SL and HL students are assessed by an internal assessment and 2 examination papers the requirements, weight allocation and structure differ for each.

Type of assessment	Format of assessment	Time	Weighting of final grade (%)
External		4 hours 30 minutes	80
Paper 1	Based on a pre-released statement that specifies the *context* and *background* for the unseen case study	1 hour 30 minutes	25
Paper 2	Based on unseen stimulus material with a quantitative focus	1 hour 45 minutes	30
Paper 3	Based on unseen stimulus material about a social enterprise	1 hour 15 minutes	25
Internal			
Business research project	Students produce a research project about a real business issue or problem facing a particular organization using a conceptual lens	20 hours	20

Type of assessment	Format of assessment	Time	Weighting of final grade (%)
External		3 hours	70
Paper 1	Based on a pre-released statement that specifies the *context* and *background* for the unseen case study	1 hour 30 minutes	35
Paper 2	Based on unseen stimulus material with a quantitative focus	1 hour 30 minutes	35
Internal			
Business research project	Students produce a research project about a real business issue or problem facing a particular organization using a conceptual lens	20 hours	30

History

"History is just one damned thing after another" (A.J. Toynbee) but it is indeed much more than that: it is the process of recording, reconstructing and interpreting the past through the investigation of a variety of sources. It is a discipline that gives people an understanding of themselves and others in relation to the world, both past and present, and teaches skills to safely navigate documents and information.

It is an exploratory subject: posing questions and accepting open-ended non-definitive answers. In order to understand the past, students must engage with it both through exposure to primary historical sources and through the work of historians. Historical study involves both selection and interpretation of data and critical evaluation of it. A study of history both requires and develops an individual's understanding of, and empathy for, people living in other periods and contexts. The course requires students to make comparisons between similar and dissimilar solutions to common human situations, whether they are political, economic or social. It invites comparisons between, but not judgments of, different cultures, political systems and national traditions. The international perspective in Diploma Programme history provides a sound platform for the promotion of international understanding and, inherently, the intercultural awareness necessary to prepare students for global citizenship. Above all, it helps to foster respect and understanding of people and events in a variety of cultures throughout the world.

The course follows a chronological path from the very beginning of the modern age to contemporary history, taking into examination thought-provoking phenomena across world history, some epochal and some less well-known. This stimulating course requires no prior subject knowledge, but involves a great deal of reading plus the ability to analyse and synthesise information from a variety of sources, so candidates need to possess very good literacy skills and the ability to form independent judgments about key events of the recent past.

Examination Components

Type of assessment	Format of assessment	Time (hours)	Weighting of final grade (%)
External		5	80
Paper 1	Source-based paper based on the five prescribed subjects	1	20
Paper 2	Essay paper based on the 12 world history topics	1.5	25
Paper 3	Essay paper based on one of the four regional options	2.5	35
Internal			
Historical investigation	A historical investigation into a topic of the student's choice.	20	20

Type of assessment	Format of assessment	Time (hours)	Weighting of final grade (%)
External		2.5	75
Paper 1	Source-based paper based on the five prescribed subjects	1	30
Paper 2	Essay paper based on the 12 world history topics	1.5	45
Internal			
Historical investigation	A historical investigation into a topic of the student's choice.	20	25

Paper 1: Prescribed Subject 2: Conquest and its Impact (SL & HL)
Paper 2: Option 8: Independence Movements (SL & HL)
Paper 2: Option 11: Causes and Effects of 20th Century Wars (SL & HL)
Paper 3: Regional History: History of Africa and the Middle East (HL only)
Internal Assessment: Historical Investigation (SL/HL)

Difference between HL and SL
The skillset unique to history is common to both SL and HL. The HL course differs in having additional content, a greater breadth of topics, and a more challenging depth of analysis: paper 3 components therefore stress the importance of "synthesis and evaluation" assessment objectives.

ESS
Environmental systems and societies (ESS) is an interdisciplinary course, encompassing both the sciences and individuals and societies and is offered at both standard level (SL) and higher level (HL).

ESS engages students in the challenges of 21st century environmental issues and consequently, it requires its students to develop a diverse set of skills, knowledge and understanding from different disciplines. Combining a mixture of methodologies, techniques and knowledge associated with both the sciences and individuals and societies, students develop a scientific approach through explorations of environmental systems. They also acquire understandings and methods from individuals and societies subjects whilst studying sustainability issues within social, cultural, economic, political, and ethical contexts. The interdisciplinary nature of the course means students produce a synthesis of understanding from the various topics studied. It also emphasises the ability to perform research and investigations and to participate in philosophical, ethical, and pragmatic discussions of the issues involved from the local through to the global level.

ESS aims to empower and equip students to:
1. Develop understanding of their own environmental impact, in the broader context of the impact of humanity on the Earth and its biosphere
2. Develop knowledge of diverse perspectives to address issues of sustainability
3. Engage and evaluate the tensions around environmental issues using critical thinking
4. Develop a systems approach that provides a holistic lens for the exploration of environmental issues
5. Be inspired to engage in environmental issues across local and global contexts.

Because of the interdisciplinary nature of the subject, students can choose to study ESS to count as either a sciences or individuals and societies course, or as both. In this latter option, students have the opportunity to study an additional subject from any other subject group, including the sciences and individuals and societies subjects.

Curriculum model overview
The ESS course has at its heart the intention of providing students with the capacity to understand and make informed decisions regarding the pressing environmental issues we face. A conceptual, interdisciplinary approach is essential to problem solving in ESS as this allows for truly holistic thinking about impending sustainability challenges. The ESS course engages students and teachers with a conceptual approach. All students are encouraged to integrate the three key concepts of perspectives, systems and sustainability throughout the course.

These concepts are given special focus within the foundation's unit.

Students at SL and HL share the following:
- The study of a concept-based syllabus
- A course which promotes holistic thinking about environmental issues and their solutions
- A foundations unit which introduces and explores the three concepts: perspectives, systems and sustainability
- One piece of internally assessed work, the internal assessment (IA)
- The collaborative sciences project.

The SL course provides students with a fundamental understanding of environmental studies and experience of the associated concepts and skills. The HL course requires students to extend their knowledge and understanding of the subject, exploring the complexity of issues with additional breadth and depth, providing a solid foundation for further study at university level.

Type of assessment	Format of assessment	Time (hours)		Weighting of final grade %
		SL	HL	
External		**3.0**	**4.5**	**75 (SL)**
				80 (HL)
Paper 1	Students will be provided with data in a variety of forms relating to a specific, previously unseen case study. Questions will be based on the analysis and evaluation of the data in the case study. All questions are compulsory.	1.0	2.0	25 (SL) 30 (HL)
Paper 2	Section A is made up of short-answer and data-based questions. Section B requires students to answer structured essay questions. There is a limited amount of choice.	2.0	2.5	50 (SL/HL)
Internal		**10**		**25 (SL)**
				20 (HL)
Individual investigation	The individual investigation is an open-ended task in which the student gathers and analyses data to answer their own formulated research question. The outcome of the Individual investigation will be assessed through the form of a written report. The maximum overall word count for the report is 3,000 words.	10		25 (SL) 20 (HL)

The foundations unit is designed to be the starting point for both standard and higher level courses. The HL course has three HL only lenses: environmental law, environmental and ecological economics, and environmental ethics. The conceptually more demanding HL lenses allow for far more sophisticated processing and balanced viewpoints. The additional HL content requires the student to make more connections between diverse areas of the syllabus, resulting in increased networked knowledge and a comprehensive understanding of the complexities of environmental issues as well as possible strategies, solutions and management. HL students are required to demonstrate critical evaluation and to synthesise material in the core content (common to both SL and HL), HL extension material and HL lenses, facilitating a more complete view of a problem with analysis at greater breadth and depth.

Group 4 – Experimental Sciences

Difference between SL and HL
Group 4 students at standard level (SL) and higher level (HL) undertake a common core syllabus, a common internal assessment (IA) scheme and have some overlapping elements in the options studied. The Group 4 Project is also an essential component of the IB which involves mixed discipline groups working together to investigate a common theme through Science.

Biology
As one of the three natural sciences in the IB Diploma Programme, biology is primarily concerned with the study of life and living systems. Biologists attempt to make sense of the world through a variety of approaches and techniques, controlled experimentation and collaboration between scientists.

At a time of global introspection on human activities and their impact on the world around us, developing and communicating a clear understanding of the living world has never been of greater importance than it is today. Through the study of DP biology, students are empowered to make sense of living systems through unifying themes. By providing opportunities for students to explore conceptual frameworks, they are better able to develop understanding and awareness of the living world around them. This is carried further through a study of interactions at different levels of biological organisation, from molecules and cells to ecosystems and the biosphere. Integral to the student experience of the DP biology course is the learning that takes place through scientifi c inquiry. With an emphasis on experimental work, teachers provide students with opportunities to ask questions, design experiments, collect and analyse data, collaborate with peers, and refl ect, evaluate and communicate their findings.
DP biology enables students to constructively engage with topical scientifi c issues. Students examine scientifi c knowledge claims in a real-world context, fostering interest and curiosity. By exploring the subject, they develop understandings, skills and techniques which can be applied across their studies and beyond.

Type of assessment	Format of assessment	Time (hours)		Weighting of final grade
		SL	HL	
External		**3**	**4.5**	**80**
Paper 1	Paper 1A: Multiple-choice questions Paper 1B: Data-based questions (four questions that are syllabus related, addressing all themes)	1.5	2	36
Paper 2	Data-based and short-answer questions Extended-response questions	1.5	2.5	44
Internal		**10**		**20**
Scientific investigation	The scientific investigation is an open-ended task in which the student gathers and analyses data in order to answer their own formulated research question. The outcome of the scientific investigation will be assessed through the form of a written report. The maximum overall word count for the report is 3,000 words.	10		20

Curriculum model overview
The DP biology course promotes concept-based teaching and learning to foster critical thinking. The DP biology course is built on:
- Approaches to learning
- Nature of science
- Skills in the study of biology.

These three pillars support a broad and balanced experimental programme. As students progress through the course, they become familiar with traditional experimentation techniques, as well as the application of technology. These opportunities help them to develop their investigative skills and evaluate the impact of error and uncertainty in scientifi c inquiry. The scientifi c investigation then places a specific emphasis on inquiry-based skills and the formal communication of scientific knowledge.

Finally, the collaborative sciences project extends the development of scientifi c communication in a collaborative and interdisciplinary context, allowing students to work together beyond the confi nes of biology.

Chemistry

Chemistry is an experimental science that combines academic study with the acquisition of practical and investigational skills. It is called the central science, as chemical principles underpin both the physical environment in which we live and all biological systems. Apart from being a subject worthy of study in its own right, chemistry is a prerequisite for many other courses in higher education, such as medicine, biological science and environmental science, and serves as useful preparation for employment.

The Diploma Programme chemistry course includes the essential principles and covers content related to inorganic, organic and physical chemistry. A modern balance is kept as the inorganic and physical elements are covered through the topics of stoichiometry; structure and bonding; energetic, kinetics and equilibrium; acids, bases and redox. Organic chemistry goes in depth into the identifi cation of functional groups and covers a wide range of reaction pathways. As chemistry is a fusion of the theoretical and the practical, laboratory work is an essential part of the course, both in informal experimentation where skills are acquired and theoretical knowledge is reinforced, and in Internal Assessment where the knowledge and skills gained are formally marked and count towards the fi nal Diploma grade. All the strands of chemistry are addressed with, for example, practical work in enthalpy measurement, rates of reaction, acid/base titration and organic synthesis. These, and many others, add up to an enjoyable journey through this fascinating and fundamental subject.

Type of assessment	Format of assessment	Time (hours)		Weighting of final grade
		SL	HL	
External		**3**	**4.5**	**80**
Paper 1	Paper 1A: Multiple-choice questions Paper 1B: Data-based questions and questions on experimental work	1.5	2	36
Paper 2	Short answer and extended-response questions	1.5	2.5	44
Internal		**10**		**20**
Scientific investigation	The scientific investigation is an open-ended task in which the student gathers and analyses data in order to answer their own formulated research question. The outcome of the scientific investigation will be assessed through the form of a written report. The maximum overall word count for the report is 3,000 words.	10		20

Type of assessment	Format of assessment	Time (hours)		Weighting of final grade
		SL	HL	
External		**3**	**4.5**	**80**
Paper 1	Paper 1A: Multiple-choice questions Paper 1B: Data-based questions and questions on experimental work	1.5	2	36
Paper 2	Short answer and extended-response questions	1.5	2.5	44
Internal		**10**		**20**
Scientific investigation	The scientific investigation is an open-ended task in which the student gathers and analyses data in order to answer their own formulated research question. The outcome of the scientific investigation will be assessed through the form of a written report. The maximum overall word count for the report is 3,000 words.	10		20

The course is available at both standard level (SL) and higher level (HL) and therefore, accommodates students who wish to study science in higher education and those who do not.

Physics

The IB Diploma Physics course can be studied at both higher level (HL) and standard level (SL). There is a common core that covers 6 topics which are Space, time and motion, The particulate nature of matter, Wave behaviour, Fields, and Nuclear and quantum physics.

There is a strong practical element to the course, and the internal assessment in the subject is entirely based on practical skills and related intellectual skills acquired throughout the course. Physics, as well as being an interesting and academically rigorous subject, is a required or desired subject to have studied for many university courses, particularly science and engineering and related subjects such as architecture.

Type of assessment	Format of assessment	Time (hours)		Weighting of final grade
		SL	HL	
External		**3**	**4.5**	**80**
Paper 1	Paper 1A: Multiple-choice questions Paper 1B: Data-based questions	1.5	2	36
Paper 2	Short-answer and extended-response questions	1.5	2.5	44
Internal		**10**		**20**
Scientific investigation	The scientific investigation is an open-ended task in which the student gathers and analyses data in order to answer their own formulated research question. The outcome of the scientific investigation will be assessed through the form of a written report. The maximum overall word count for the report is 3,000 words.	10		20

The course requires a good level of mathematical ability and as such potential students should be achieving at least a level 5 in Mathematics.

Group 5 – Mathematics

The nature of mathematics can be summarised in a number of ways: for example, it can be seen as a well-defined body of knowledge, as an abstract system of ideas, or as a useful tool. But there is no doubt that mathematical knowledge provides an important key to understanding the world in which we live.
Because individual students have different needs, interests and abilities, we offer two different courses in mathematics, each taught at either Higher or Standard Level. These courses are designed for different types of students. Teachers will assist with the selection process and to offer advice to students about how to choose the most appropriate course throughout Grade 10. This will be done during a teacher-led session but also student, parent and teacher interviews. It is imperative that the student selects the most appropriate course for their ability but also for their future.

Mathematics: Analysis and Approaches
The Mathematics: Analysis and Approaches course recognizes the need for analytical expertise in a world where innovation is increasingly dependent on a deep understanding of mathematics. The focus is on developing important mathematical concepts in a comprehensible, coherent and rigorous way, achieved by a carefully balanced approach. Students are encouraged to apply their mathematical knowledge to solve abstract problems as well as those set in a variety of meaningful contexts. Mathematics: analysis and approaches has a strong emphasis on the ability to construct, communicate and justify correct mathematical arguments. Students should expect to develop insight into mathematical form and structure, and should be intellectually equipped to appreciate the links between concepts in different topic areas.

Type of assessment	Format of assessment	Time (hours)		Weighting of final grade (%)	
		SL	HL	SL	HL
External					
Paper 1	No technology allowed. **Section A:** compulsory short-response questions based on the syllabus. **Section B:** compulsory extended-response questions based on the syllabus.	1.5	2	40	30
Paper 2	Technology allowed. **Section A:** compulsory short-response questions based on the syllabus. **Section B:** compulsory extended-response questions based on the syllabus.	1.5	2	40	30
Paper 3	Technology allowed. Two compulsory extended-response problem-solving questions.		1		20
Internal					
Exploration		15	15	20	20

Students are also encouraged to develop the skills needed to continue their mathematical growth in other learning environments. The internally assessed exploration allows students to develop independence in mathematical learning. Throughout the course students are encouraged to take a considered approach to various mathematical activities and to explore different mathematical ideas.

Mathematics: Analysis and Approaches Higher Level course is a demanding one, requiring students to study a broad range of mathematical topics through very formal, rigorous and sophisticated approaches and to varying degrees of depth. Paper 1 is a non-calculator paper, and students need to be profi cient in understanding and showing the process, rather than just know how to get the solution.

The Mathematics: Applications and Interpretation
The Mathematics: Applications and Interpretation course recognizes the increasing role that mathematics and technology play in a diverse range of fields in a data-rich world. As such, it emphasises 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 includes topics that are traditionally part of a pre-university mathematics courses such as calculus and statistics.
Students are encouraged to solve real-world problems, construct and communicate this mathematically and interpret the conclusions or generalisations.

Type of assessment	Format of assessment	Time (hours)		Weighting of final grade (%)	
		SL	HL	SL	HL
External					
Paper 1	Technology allowed. Compulsory short-response questions based on the syllabus.	1.5	2	40	30
Paper 2	Technology allowed. Compulsory extended-response questions based on the syllabus.	1.5	2	40	30
Paper 3	Technology allowed. Two compulsory extended-response problem-solving questions.		1		20
Internal					
Exploration		15	15	20	20

Students should expect to develop strong technology skills, and will be intellectually equipped to appreciate the links between the theoretical and the practical concepts in mathematics. All external assessments involve the use of technology. Students are also encouraged to develop the skills needed to continue their mathematical growth in other learning environments.

The internally assessed exploration allows students to develop independence in mathematical learning. Throughout the course, students are encouraged to take a considered approach to various mathematical activities and to explore different mathematical ideas.

Group 6 – Arts

Assessment outline—HL	Weighting
External assessment	**60%**
Art-making inquiries portfolio (32 marks) This is an SL and HL task focused on the student's art-making as inquiry. The student selects and organizes visual evidence of their personal investigations, discoveries and creations, supported by critical reflections, all in a portfolio. They provide curated evidence of their art-making as inquiry in a **variety** of art-making forms and creative strategies. The portfolio demonstrates how the student developed and refined their visual language through one or more **lines of inquiry** and must explicitly include the **inquiry questions or generative statements** they worked with. HL students submit **two** mandatory files. • **One** PDF file of **up to 15 screens** including visual evidence accompanied by written materials. The total word count must not exceed **3,000 words**. • **One** separate text file listing the sources.	30%
Artist project (40 marks) This is a **stand-alone**, HL-only task focused on the student creating and situating in context an artwork that they ideate and realize as part of a project of their choice. The artist project demonstrates through curated evidence how the student work was informed by investigations of context, by connections with **at least two artworks by different artists, and by dialogues**. A **short video** curated by the student shows where and how the project artwork was realized to communicate with the audience in the chosen context. HL students submit **three** mandatory files. • **One** PDF file of **up to 12 screens** including visual evidence and supporting written materials. The total word count must not exceed **2,500 words** and the student must comply with the exact word counts set for each section. • **One** video file **up to three minutes long** presenting the project artwork realized in the chosen context. The video is submitted accompanied by the artwork details and a short text with the finalized artistic intentions (**100 words maximum**). • **One** separate text file listing the sources.	30%

The visual arts are an integral part of everyday life, permeating all levels of human creativity, expression, communication and understanding.
They range from traditional forms embedded in local and wider communities, societies and cultures, to the varied and divergent practices associated with new, emerging and contemporary forms of visual language. They may have socio-political impact as well as ritual, spiritual, decorative and functional value; they can be persuasive and subversive in some instances, enlightening and uplifting in others. We celebrate the visual arts not only in the way we create images and objects, but also in the way we appreciate, enjoy, respect and respond to the practices of art-making by others from around the world. Theories and practices in visual arts are dynamic and ever-changing, and connect many areas of knowledge and human experience through individual and collaborative exploration, creative production and critical interpretation.
The IB Diploma Programme visual arts course encourages students to challenge their own creative and cultural expectations and boundaries. It is a thought-provoking course in which students develop analytical skills in problem-solving and divergent thinking, while working towards technical proficiency and confidence as art-makers. In addition to exploring and comparing visual arts from different perspectives and in different contexts, students are expected to engage in, experiment with and critically reflect upon a wide range of contemporary practices and media.

The course is designed for students who want to go on to study visual arts in higher education as well as for those who are seeking lifelong enrichment through visual arts.

Assessment outline—SL	Weighting
External assessment	**60%**
Art-making inquiries portfolio (32 marks) This is an SL and HL task focused on the student's art-making as inquiry. The student selects and organizes visual evidence of their personal investigations, discoveries and creations, supported by critical reflections, all in a portfolio. They provide curated evidence of their art-making as inquiry in a **variety** of art-making forms and creative strategies. The portfolio demonstrates how the student developed and refined their visual language through one or more **lines of inquiry** and must explicitly include the **inquiry questions or generative statements** they worked with. SL students submit **two** mandatory files. • **One** PDF file of **up to 15 screens** including visual evidence accompanied by written materials. The total word count must not exceed **3,000 words**. • **One** separate text file listing the sources.	40%
Connections study (24 marks) This is an SL-only task focused on the student situating in context one of their resolved artworks, chosen from the five they submit for IA. The study presents curated visual and written evidence to demonstrate the connections between the student's chosen resolved artwork and their own context(s), and between the chosen artwork and **at least two artworks by different artists**. The connections must be informed by research, and the study must demonstrate understanding of the cultural significance of the two artworks by different artists. SL students submit **two** mandatory files. • **One** PDF file of **up to 10 screens** including visual evidence and supporting written materials. The total word count must not exceed **2,500 words**. • **One** separate text file listing the sources.	20%
Internal assessment	**40%**
This component is internally assessed by the teacher and externally moderated by the IB at the end of the course. **Resolved artworks (32 marks)** This is an SL-only task focused on the student's ability to create a **coherent body of work**. Each student submits **five resolved artworks** to demonstrate their best achievements in communicating their artistic intentions coherently. The student provides evidence of synthesis of concept and form, and of their competence in resolving artworks. They also write a **rationale** to articulate their artistic intentions and the choices that informed the making of their **coherent** body of artworks. SL students submit **six** mandatory files. • **Five** image or video files (**each up to three minutes long**) of artworks—each accompanied by a title and details on medium and size. Two optional supporting image files per artwork can be submitted to show details or additional views. • **One** PDF file of **up to two screens** for the rationale (which must not exceed **700 words**).	40%

All assessment tasks are non-examination based. Two tasks are externally assessed, and one is internally assessed by the teacher and externally moderated by the IB. The assessment model clearly differentiates the requirements between SL and HL, Reflecting the teaching hours allocated at each level and the greater depth and breadth of work required in the HL course.

Task 1 is common to SL and HL.
All students complete the **art-making inquiries portfolio**.
Task 2 is designed differently for SL and HL, to fully reflect the different allocation of teaching time at each level. SL students complete the **connections study** and HL students complete the **artist project**.

Internal assessment	**40%**
This component is internally assessed by the teacher and externally moderated by the IB at the end of the course. **Selected resolved artworks (40 marks)** This is an HL-only task focused on the student's ability to create a **coherent body of work selected from their wider production**. Each student submits **five selected resolved artworks** to demonstrate their best achievements in communicating their artistic intentions coherently. The student provides evidence of synthesis of concept and form, and of their competence in resolving artworks. They also write a **rationale** to articulate how they realized their artistic intentions through a selection process for the **five resolved artworks**, **from at least eight** of their works. **Five artwork texts** situate through critical analysis each of the selected resolved artworks in a wider artistic context and in relation to the student's practice. HL students submit **six** mandatory files. • **Five** image or video files (**each up to three minutes long**) of artworks—each accompanied by a title and details on medium and size. Two optional supporting image files per artwork can be submitted to show details or additional views. • One PDF file of **up to eight screens** including the rationale (which must not exceed **700 words**) and **five** artwork texts (with a total word count not exceeding **1,000 words**).	40%

Task 3 is the **internal assessment (IA)**, differentiated between SL and HL.
The IA is focused on the student's ability to create a coherent body of work. Both SL and HL students submit five resolved artworks, but some of the requirements of the task are different for each level.

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