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RMIB Course Bulletin



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On the International Baccalaureate Mission and Philosophy

The International Baccalaureate (IB) is more than its educational programs. The International Baccalaureate's mission is to create a better world through education. The IB values its hard-earned reputation for quality, high standards, and pedagogical leadership. IB promotes intercultural understanding and respect, not as an alternative to a sense of cultural and national identity, but as an essential part of life in the 21st century. For more information about the International Baccalaureate, please visit their web site at: www.ibo.org

All of this is captured in the IB mission statement...

The International Baccalaureate aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.

To this end the organization works with schools, governments and international organizations to develop challenging programs of international education and rigorous assessment.

These programs encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.

The IB Learner Profile

In 2006, the International Baccalaureate launched their IB Learner Profile. The Learner Profile is the IB mission statement translated into a set of learning outcomes for the 21st century. It is a set of traits and characteristics which inspire, motivate, and focus the work of schools, students, and teachers, uniting them in a common purpose.

IB Learners Strive to be:

Inquirers
Knowledgeable
Communicators
Caring
Balanced

Open-Minded
Thinkers
Principled
Risk-Takers
Reflective



Introduction to the International Baccalaureate Programme

The International Baccalaureate Programme (IB) at Richard Montgomery High School (RMHS) is a countywide program that adheres to international standards. The International Baccalaureate programs are unique in that they provide students with an interdisciplinary liberal arts education leading to a diploma that is recognized throughout the world. Students pursue studies in English, World Languages, Social Studies, Experimental Sciences, Mathematics, and at least one academic elective. Teachers plan and provide interdisciplinary instruction and assessments focusing on common topics, themes, and materials within the subject areas. The curriculum is based on MCPS Honors objectives, Gifted and Talented practices, and the topics and goals identified by the curriculum board of the International Baccalaureate.

The International Baccalaureate was founded in 1968 to provide a rigorous, well-rounded education to prepare students throughout the world for university study. The broad-based curriculum is consistent in all IB schools, and student achievement is assessed by internationally developed and graded examinations. At RMHS, the IB program is comprised of the IB Middle Years Programme in Grades 9 and 10 and the IB Diploma Programme in Grades 11 and 12. The purpose of the IB MYP is to prepare the students for the courses and the examinations required to earn the IB Diploma. The instruction in the 9 and 10 program is accelerated due to the nature of the students targeted for application-based programs countywide.

Students who participate in the IB Programme fulfill the Maryland State Department of Education (MSDE) graduation requirements as well as the IB Diploma requirements. The International Baccalaureate requirements include coursework and passing scores on examinations in all six subjects, satisfying the Creativity, Activity and Service (CAS) activity component, composition of a 4,000-word Extended Essay, and successful completion of the Theory of Knowledge assessments. These requirements are explained in this booklet. The MSDE requirements include passing state-mandated course work in fine arts, technology, health, and physical education. Students successfully completing the IB Programme can earn an IB Diploma or an IB Bilingual Diploma, a Maryland High School Diploma, a MD Seal of Biliteracy and a Certificate of Merit from the state.

Although there are multiple IB Diploma Programmes in Montgomery County Public Schools (MCPS), Richard Montgomery is the only program identified as the countywide application-based program. A four-year cohort model started in 1987, the IB Programme at Richard Montgomery is a nationally recognized program designed for academically talented and motivated students. All program students complete the Middle Years Programme as well as the full Diploma Programme. The pace and depth of instruction corresponds to the academic needs of its highly able, high-achieving students. In addition, as the first IB Diploma Programme in Montgomery County, The International Baccalaureate at Richard Montgomery has served as the model for many of the MCPS IB MYP and DP Programmes which have followed.

Students are expected to pay the exam fees set by the IB Organization, which are required to complete the diploma. These fees are collected when students register for the IB subject examinations in Grades 11 and 12. Assistance with these fees is available for families with documented need and who qualify for aid programming. Students have been selected to join the IB at RMHS because we believe they have the talent and desire to achieve the International Baccalaureate Diploma; financial need will not prevent a student from obtaining this goal.

The International Baccalaureate Continuum



The International Baccalaureate academic programs span K – 12 education. There are four program models in the IB Continuum. Richard Montgomery offers two of these programs as an authorized IB World School.

The Middle Years - Grades 9 and 10

The IB Middle Years Programme is a five-year program for students aged 11 - 16 years. Students in the IB Programme at Richard Montgomery complete the two-year model of the IB MYP, which occurs in grades 9 and 10. Like the IB Diploma Programme, the MYP is academically rigorous and designed to focus on critical thinking, holistic development of the individual, communication in multiple languages and international mindedness. The Richard Montgomery IB Program is designed with vertical articulation, grades 9 – 12, in mind, and the RMS-designated course work is geared towards helping students achieve high success in the six subject areas as they attempt the Diploma. Consequently, delivery of the IB Middle Years Programme provides an excellent preparation for the IB Diploma Programme, as the two programs are part of one continuum of international education.



THE MIDDLE YEARS SEQUENCE

Comprised of eight subject areas, the Middle Years holistic model of education promotes the concurrent study of one discipline in the eight subject groups. Each of the eight subject groups is taught through the MYP Global Contexts. The Global Contexts distinguish the MYP from either the IB Diploma Programme or a more traditional course of study and can best be understood as themes which are repeatedly addressed throughout the academic subjects. The Approaches to Learning provide an additional focus on the explicit thinking and learning skills that are developed over the course of the five-year program. Because these contexts are interwoven throughout the traditional academic subjects, students come to see the complex interrelationships between subject areas and content that have traditionally been taught in isolation.

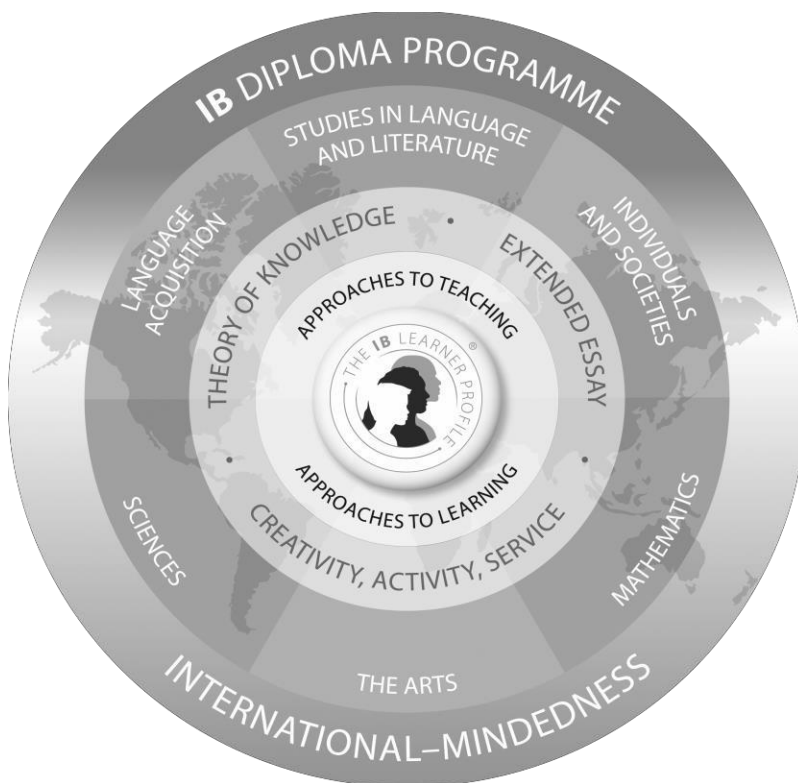
MYP Subject	9 th Grade	10 th Grade
Language and Literature	RMS English 9	RMS English 10
Language Acquisition	Spanish/French/ Chinese	Spanish/French/ Chinese
Mathematics	Geometry AAF IB Precalculus SL	AAF IB Precalculus SL IB Precalculus HL BC Calculus
Sciences	<u>RMS Biology</u> or Magnet Chemistry or Honors Physics	<u>Magnet Chemistry</u> RMS Biology or Honors Physics or AP Physics
Individuals and Societies	AP US Government	AP US History
Sixth Subject Elective Pathway		
<i>Students will study two of these three areas during the two-year program.</i>		
6.	PE	Art, Band, Chorus
7.	AP Computer Science Principles (or Foundations of Technology)	Health

All students who complete the IB Middle Years Programme will be eligible for a certificate recognizing their achievements. To earn a certificate of completion for the IB Middle Years Programme, students must meet the following four criteria:

- **Participate in the last two years of the program (grades 9 and 10)**
- **Complete the Personal Project:**
Each student must earn a grade of at least 3 out of 7 on the MYP Personal Project. This project begins at the start of the 10th grade year and completed in February. Students also receive an additional course on their transcript for completing the Personal Project. This course, titled ***MYP Research Seminar***, is in addition to the academic program schedule of seven classes and shows as an additional course with 0.5 credit for all 10th graders.
- **Community and Service**
Each student must engage in meaningful activity and service throughout their time in the program. There are many opportunities available for activity and service.
- **Successfully complete six of eight subjects of the program**
Successful completion means having earned credit in all the classes as indicated in the table above during the last two years of the program and achieving mastery of the IB MYP objectives in each subject, as indicated by students' performance levels on the MYP assessment criteria.

The Diploma Years - Grades 11 and 12

The International Baccalaureate Diploma is a two-year program, during which students must complete the requirements for each of the 6 subject areas and the three components reflected inside the IB Diploma model “Core”. The Richard Montgomery IB Programme is designed with vertical articulation grades 9 – 12, thus the MYP course work in the two-year model for 9 and 10 is designed to specifically prepare students for the IB examinations and Diploma requirements. The four-year model ensures that students are learning the requisite content and skills needed to achieve high marks in the six subject areas. CAS, TOK, and the Extended Essay are achieved over the two years of the program.



Requirements for the IB Diploma:

- Study of six disciplines with acceptable scores on one examination from each group.
- Sit for a *minimum* of 3 examinations at Higher Level and a maximum of 3 examinations at Standard Level OR maximum of 4 at Higher Level and a *minimum* of 2 at Standard Level

Higher Level defines courses and assessments which include two years of study and concentration in the subject area during the IB Diploma years (grades 11 and 12)

Standard Level defines courses and assessments which depending on the discipline may be completed in a single year course of study and concentration in the subject area (grades 11 and 12)

- Completion of the three elements of the IB Core with acceptable scores on the required assessments. See the requirements for these components on page 10 for further information.

Theory of Knowledge 1 and 2
Creativity, Activity, and Service
Extended Essay

THE IB DIPLOMA YEARS COURSE OPTIONS AND SEQUENCES

Requirement	RMHS Options	Levels offered
Group 1: Language & Literature	English Literature	HL
	English Language & Literature	HL
Group 2: Language Acquisition	Chinese, French, Spanish	SL or HL or A2
Group 3: Individuals & Societies	Economics	SL
	Global Politics	SL
	History	SL or HL
	Philosophy	SL
	Social Anthropology	SL
Group 4: Experimental Sciences	Biology	SL or HL
	Chemistry	SL or HL
	Environmental Systems & Societies	SL
	Physics	SL or HL
	Sports Exercise & Health Science	SL
Group 5: Mathematics	Math Applications	SL
	Math Analysis	SL or HL
Group 6: Arts & Electives	Visual Art & Design	SL or HL
	Computer Science	SL
	Film	SL or HL
	Music	SL
	Theatre	SL or HL
	Second language – Group 2	SL or HL
	Second social science - Group 3	SL
Second science - Group 4	SL	

SL Exams (up to 2 in grade 11; may take more in grade 12)	HL Exams (up to 4 in grade 12 only)
1.	1. English
2.	2.
3.	3.
(may choose to take only 2, if taking 4 HL exams)	4.
	(may choose to take only 3, if taking 3 SL exams)

ASSESSMENTS AND AWARDING THE IB DIPLOMA

The terms “Higher” and “Standard” are not directly related to the challenge -level of instruction or difficulty of content. The terms define time, or length of time, spent in a course of study. Higher simply means a student has spent two years of study during the 11th and 12th grade year in that subject area. The exams are designed to evaluate the two years of knowledge and study.

DP SUBJECT	STANDARD LEVEL	HIGHER LEVEL
Group 1: Language & Literature		English Literature English Language & Literature
Group 2: Language Acquisition	Language Acquisition (Chinese, French, Spanish)	Language Acquisition (Chinese, French, Spanish)
Group 3: Individuals & Societies	History Economics Environmental Systems & Societies Social Anthropology Philosophy Global Politics	History
Group 4: Experimental Sciences	Biology Chemistry Environmental Systems & Societies Physics Sports Exercise & Health Science	Biology Chemistry Physics
Group 5: Mathematics	Math Applications Math Analysis	Math Analysis
Group 6: Arts & Electives	Computer Science Film Music Theatre Visual Arts Second Group 2, 3 or 4	Film Theatre Visual Arts Second Group 2, 3 or 4

To complete the IB Diploma, students must take one course from each academic subject area or “group”. These courses vary in length and are somewhat dependent on the level at which the student enters the official DP. For instance, a student is generally at year 5 of a World Language to test in Group 2 (Language Acquisition). This level may be attained in year 1 or year 2 of the Diploma program (grade 11 or 12). The International Baccalaureate examiners assign a score for each discipline. The score is based on the external examinations held at the end of each course (in May) and the required internal and additional external assessments completed at the school level. Internal assessments and guided coursework are developed and graded by the teachers at RMHS in accordance with the specifications established by IB.

These grades contribute to the final score awarded in each of the disciplines. Each composite score is awarded on a scale of 1 – 7 listed here below:

7 = Excellent 6 = Very Good 5 = Good 4 = Satisfactory 3 = Mediocre 2 = Poor 1 = Very Poor

The final grade awarded per IB course comprises external and internal assessments in each subject area which includes oral, written, and collaborative presentation and project-based work. All subjects then culminate with a two or three-part exam in May of each IB Diploma testing year.

Summary of IB Diploma Attainment Requirements

IB Diploma Program Components & IB Scores Possible

IB English	1-7
IB World Language	1-7
IB History	1-7
IB Science	1-7
IB Math	1-7
IB Arts or IB Elective in group 2, 3, or 4	1-7

At least 3 but no more than 4 subjects must be completed at Higher Level (HL). Only 6 IB subjects – one in each of these subjects - may contribute to the IB Diploma total score.

Theory of Knowledge (TOK)

A-E Extended Essay (EE) A- E

See matrix below for how TOK and EE grades of A-E contribute to 3 additional points toward the IB Diploma total score.

Creativity-Activity-Service (CAS)

CAS is pass/fail; CAS requirements are either met or not met.

Points & Conditions Necessary to Successfully Earn the IB Diploma

- An IB score must have been awarded for each of the six IB Diploma subjects, TOK, and the Extended Essay.

Student must not have any scores of “N” – meaning “no score awarded” – due to malpractice or failure to submit any assessment component, including internal assessments.

- CAS requirements must be met.
- Student must have a score of D or higher in *both* Theory of Knowledge and the Extended Essay (no E score).
- Student must earn *at least* 24 total points. (45 total pts. possible – 42 from IB subjects + 3 from TOK/EE, as below)
 - Students must earn a total of *at least* 12 points in HL subjects (for candidates who register for four HL subjects, the three highest HL grades will count toward this total).
 - Students who take 3 HL and 3 SL subjects must earn *at least* 9 points total in the SL classes.
 - Students who take 4 HL and 2 SL subjects must earn *at least* 5 points total in the SL classes.
- The student must earn a 2 or higher in all subjects (no scores of 1).
 - There may be no more than *two* scores of 2, overall.
 - There may be no more than *three* scores of 3 or lower, overall.

The above requirements relate to the official scores the student earns from the IB, these requirements are set by the International Baccalaureate and are for the IB diploma not the State of Maryland Diploma. IB Scores and IB Diploma results are available to students in early July.

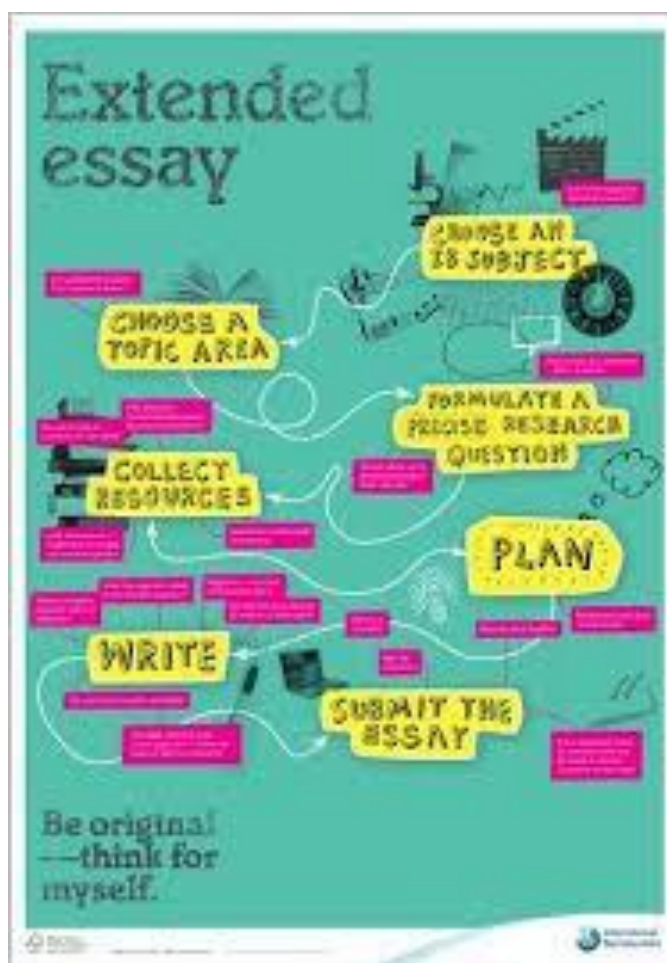
TOK/Extended Essay Point Matrix

Students may earn points towards the total IB Diploma score of 45 if their Theory of Knowledge Paper and Presentation and Extended Essay (all externally assessed) meet the grades assigned in the associated matrix and point value.

These three points are not extra points, they are points given for required components of the Diploma Program if the student makes the marks presented.

Students who are awarded an E for either assessment will not be eligible for the IB Diploma regardless of their total points awarded, as an E in either requirement results in a Failing Condition.

ToK/EE	A	B	C	D	E
A	3	3	2	2	Failing condition
B	3	2	2	1	
C	2	2	1	0	
D	2	1	0	0	
E	Failing condition				



COURSE OFFERINGS for the IB Programme are listed by IB Subject-Area Groups

Please Note: Courses selected or required from the mainstream MCPS offerings can be found in the Richard Montgomery High School course code document or in the MCPS Course Bulletin.

GROUP 1: Studies in Language and Literature

The general aims of the IB English curricula are to help students develop

- written and oral communication skills necessary for achievement on the oral and written IB examinations and the extended essay
- understanding of the relationships of literature to art, music, social studies, science, math, and culture
- awareness of literature as a reflection of historical events and the human experience

IB RMS ENGLISH 9 (ENG2076A/ENG2076B)

RMS English 9 begins the four-year sequence of IB English courses. An emphasis on the writing process complements the study of literature. The first semester introduces literary analysis, with a focus on mythology and Greek, Shakespearean, and modern drama. In the second semester, the focus shifts to the study of poetry and fiction as students examine the connection between the classical tradition and modern thought.

IB RMS ENGLISH 10 (ENG2077A/ENG2077B)

In RMS English 10, the theme of the universality of humanity provides a framework of an intensive study of literature. The first semester expands on the skills of literacy analysis through the study of short stories, Shakespearean drama, and modern American literature. The second semester, students examine modern American poetry, drama and fiction and complete a personal study of an author.

IB ENGLISH LITERATURE 1 – OPEN ENROLLMENT. Required for Group 1 HL (ENG2036A/ENG2036B)

Students appreciate the artistry of literature around the world and develop as readers and thinkers with an emphasis on the ability to reflect critically on the texts studied. Literature studied includes works in translation and a variety of genres, such as novels, poetry, and drama. Students focus on literary analysis, both in written and oral commentaries, while exploring a broad range of literary texts for written assessment and presentation. Students are prepared for the AP Literature exam after taking IB English 1. Students must take both IB English Literature year 1 and 2 to sit for the required higher-level exam.

IB ENGLISH LITERATURE 2 – OPEN ENROLLMENT. Required for Group 1 HL (ENG2037A/ENG2037B)

This course is the final year of the two-year Literature study and continues to reinforce the appreciation of literature and the development of critical thinking skills. Students continue to study works of various genres in preparation for the higher level IB English Literature exam.

IB ENGLISH LANGUAGE AND LITERATURE 1 - OPEN ENROLLMENT. Required for Group 1 HL (ENG2045A/2045B)

Students appreciate literary and non-literary texts from around the world and develop as readers and thinkers with an emphasis on the ability to reflect critically on the texts studied. Works studied will include both literary texts, and a wide variety of non-literary texts such as films, photographs and interviews. Students are prepared for the AP Language exam after taking IB English Language and Literature 1. Students must take both IB English Language and Literature year 1 and 2 to sit for the required higher-level exam.

IB ENGLISH LANGUAGE AND LITERATURE 2 – OPEN ENROLLMENT. Required for Group 1 HL (ENG2046A/ENG2046B)

This course is the final year of the two-year Literature study and continues to reinforce the appreciation of literature and the development of critical thinking skills. Students continue to study works of various genres in preparation for the higher level IB English Literature exam.

GROUP 2: Language Acquisition – Language B and / or a second Language A

The general aims of the World language curricula are to help students develop:

- proficiency in oral and written expression in a second language
- proficiency in comprehension of a spoken and written second language
- understanding of the histories, literature, cultures of the language studied within the IB prescribed themes
- critical thinking skills needed for integration and analysis of course content

Upon entering the IB Program, students register for the next level in the language they are currently studying. If a student is unsure of the appropriate level or has taken more than two years of a world language before Grade 9, members of the world languages department meet with the student and together determine the appropriate level.

RMS Level 3: Chinese (WLG2037A/WLG2037B), French (WLG2056A/WLG2056B), Spanish (WLG2151A/WLG2151B)

The curricula of Level 3 courses provide intensive training in the basic foundations and intermediate level language skills to enable students to become proficient in both oral and written expression and listening and reading comprehension. The MCPS program of study world language objectives are combined with the themes required by the IB Program.

IB Level 4 Language B: OPEN ENROLLMENT. Chinese (WLG2204A/WLG2204B), French (WLG2208A/WLG2208B), Spanish (WLG2226A/WLG2226B)

IB Level 4 courses comprise the first year of a two-year sequence to prepare students for the standard level language examination. Students strengthen their fluency in oral and written language with the prescribed IB themes.

IB Level 5 Language B: Chinese (WLG2205A/WLG2205B), French (WLG2209A/WLG2209B), Spanish (WLG2227A/WLG2227B)

IB Level 5 courses emphasize reading comprehension, interpretation, analysis, and oral, listening and writing proficiency. Students are prepared for the Standard level IB exam and the Advanced Placement Language Exam.

IB Level 6 Language B: Chinese (WLG2206A/WLG2206B), French (WLG2210A/WLG2210B), Spanish (WLG2228A/WLG2228B)

IB Level 6 courses continue to emphasize the composition of well-constructed extended essays and oral proficiency at the near-native level. Instruction emphasizes critical oral and written proficiency. In-depth study of life and civilization and literature of pertinent countries continues. Students are prepared for the higher level IB exam.

IB Level 7: IB Language A: Language and Literature – Chinese (WLG2207A/WLG2207B), French (WLG2211A/WLG2211B), Spanish (WLG2229A/WLG2229B)

IB Language A is a unique bilingual offering for students who can achieve a sophisticated level of language mastery. This level of assessment is completed during year 7 of the modern language course. Students who successfully complete the Language A option in Group 2, may be awarded a bilingual diploma by the IB.

The IB Bilingual Diploma – Available to students who are participating in the IB Diploma Programme.

- Students complete 2 Group 1 requirements:
 - Language A English
 - Language A Chinese, French or Spanish
- Student engages in course work and the Language A assessment as a native speaker

GROUP 3: Individuals and societies (History requirements and Group 3 Electives)

The general aims of the IB social science curricula are to help students develop

- knowledge of the past to enable better understanding of the present
- interest in the nature of history as a discipline
- understanding of the international dimension of history
- awareness of continuity and change throughout time
- empathy with people living in different places and at different times
- understanding of the relationships among history, art, music, and language

AP US GOVERNMENT - Grade 9 Required (SOC2021A (30)/SOC2021B (30))

Students focus on the purpose of government; the structure, function, and operations of the US government; rights and responsibilities of US citizens; and a comparison of parliamentary, socialistic, and constitutional governments. This course prepares students for the Advanced Placement examination in the U.S. Government in May of their freshman year. It also fulfills the social studies graduation requirement for National, State, and Local Government.

AP US HISTORY - Grade 10 Required (SOC2022A (30)/SOC2022B (30))

Students survey United States history from the colonial era to the Cold War. The college-level work prepares students for higher-level thinking and writing skills required in IB History. This course also prepares students for the Advanced Placement examination in U.S. History in May of their sophomore year.

IB HISTORY 1- OPEN ENROLLMENT. Required for DP students. (SOC2043A/SOC2043B)

Students study major concepts and issues from world history including change, continuity, causation, significance, and perspective in a comparative case study approach. The course places a special focus on interpreting evidence and making historical claims. Topics include Rights and Protest, Independence Movements, and Authoritarian States. Major topics include Apartheid, Civil Rights, Independence of Algeria, India, and Pakistan, China under Mao, and Germany under Hitler. Students also write a 2200-word independent research paper. This class prepares students for the SL exam and fulfills the Modern World History graduation requirement.

IB HISTORY 2: Grade 12 Required for IB History HL (SOC2074A/SOC2074B) OPEN ENROLLMENT, IB History Prerequisite

Africa Regional Focus: Students study the history of Africa including the political and social patterns of African Empires, colonization, and the Scramble for Africa, six 20th century African Independence movements, and the political and economic trajectories of post-colonial Africa with a special emphasis on identity and conflict. Students who take both IB History 1 and IB History 2 will be prepared for the HL exam.

Europe Regional Focus: Students study the history of Europe including the political, social, and economic transformations of the long 19th century. Topics include the French Revolution and Napoleon, Industrialization and Nation-Building, World War I, the Interwar Years, and World War II. Students who take both IB History 1 and IB History 2 will be prepared for the HL exam.

IB ECONOMICS - Grade 11 or 12 (SOC2045A/SOC2045B)

IB Economics focuses on macroeconomics, the branch of economics that views the economy as a whole. Emphasis is on the analysis of economic problems such as unemployment and inflation and the role that government plays in maximizing economic growth while keeping prices stable. International economic topics are given emphasis as part of the IB curriculum. In second semester, the course focuses on microeconomics, which investigates decision-making of individual consumers and producers. The course focuses on the nature and function of the product and resource markets, with the international economy and the role of the government. The course prepares students for the standard level IB Economics exam and the AP Macroeconomics and Microeconomics exams.

IB SOCIAL and CULTURAL ANTHROPOLOGY – OPEN ENROLLMENT. Grade 11 or 12 (SOC2048A/SOC2048B)

IB Social and Cultural Anthropology is the comparative study of culture and human societies. Anthropologists seek an understanding of humankind in all its diversity. This understanding is reached through the study of cultures and societies and the exploration of the general principles of social and cultural life. Students will evaluate comparative perspectives that challenge cultural assumptions and issues associated with the complexity of modern societies, in local, regional, and global contexts. Topics of anthropological inquiry include social change, kinship, symbolism, exchange, belief systems, ethnicity, and power relations. This course prepares students for the standard level IB Social and Cultural Anthropology examination.

IB PHILOSOPHY – OPEN ENROLLMENT. Grade 11 or 12 (SOC2046A/SOC2046B)

IB Philosophy, through the examination of texts and themes, explores fundamental questions that people have asked throughout human history. The course engages students intellectually and actively, with a focus on cultivating critical thinking and developing a knowledgeable mind about various cultures and world perspectives, as well as the view that there are common themes addressed by humanity on a global scale. Students will complete a variety of assessments requiring oral and written reflection. The course prepares students for the standard level IB Philosophy exam.

IB GLOBAL POLITICS – OPEN ENROLLMENT. Grade 11 or 12 (SOC2018A/SOC2018B)

IB Global Politics explores fundamental political concepts such as power, liberty, and equality, in a range of contexts and at a variety of levels. Students develop an understanding of the local, national, international, and global dimensions of political activity, as well as allowing them the opportunity to explore political issues affecting their own lives. The global politics course helps students to understand abstract political concepts by grounding them in real world examples and case studies. The course also invites comparison between such examples and case studies to ensure a transnational perspective. The course prepares students for the standard level IB Global Politics exam.

IB ENVIRONMENTAL SYSTEMS AND SOCIETIES SL – Grade 11 or 12 (SCI2090A/SCI2090B)

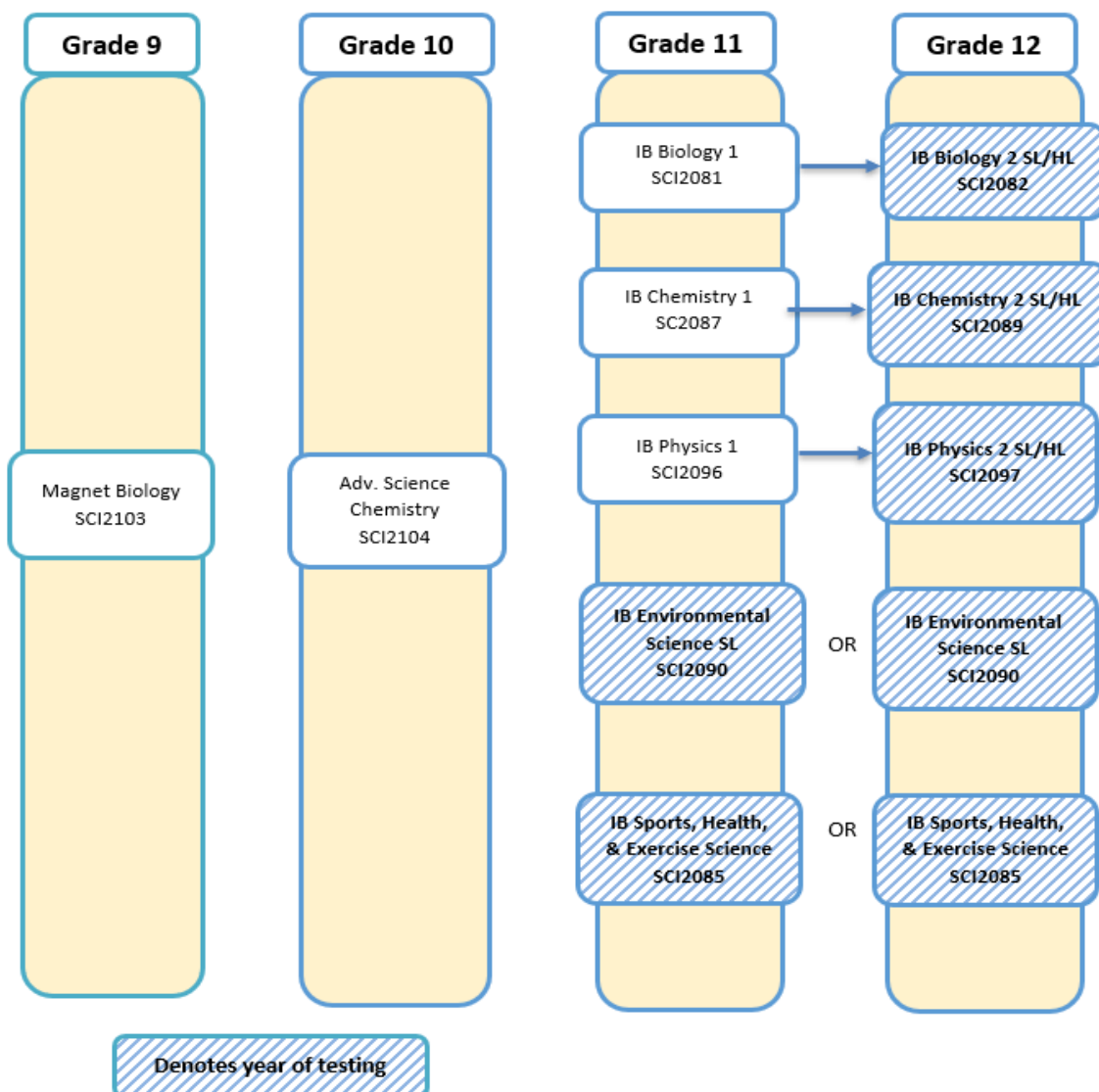
IB Environmental Systems and Societies is designed to provide students with a coherent perspective of the interrelationships between environmental systems and societies; student attention is constantly drawn to their own relationship with their environment and the significance of choices and decisions that they make in their own lives. The course approach is conducive to students evaluating the scientific, ethical, and socio-political aspects of issues, and provides students with a body of knowledge, methodologies, and skills that can be used in the analysis of environmental issues at local and global levels. The course prepares students for the standard level IB Environmental Systems and Societies and the AP Environmental exam. This course satisfies Group 3 or Group 4 requirements.

GROUP 4: EXPERIMENTAL SCIENCES

The general aims of the IB science curricula are to help students develop

- understanding of the knowledge of science (facts, principles, and concepts)
 - conceptual and practical skills resulting from involvement in scientific knowledge
 - ability to analyze scientific information critically and independently and to recognize the limitations of scientific knowledge
 - ability to apply knowledge and skills in order to generate new knowledge
 - awareness of the impact of science on ethical, philosophical, and political issues
- understanding of the international dimension of science and recent scientific thinking from many countries

Magnet IB Science Pathway



All IB DP sciences courses meet NGSS and State Science Assessment requirements.

AP Physics 1 has Honors Geometry as prerequisite. IB Physics and AP Physics C have Pre-Calculus as prerequisite.

RMS BIOLOGY - Grade 9 or 10 Required (SCI2103A/SCI2103B)

Students study living organisms ranging from molecular levels to the biosphere. Topics include scientific method, cytology, genetics, evolution, taxonomy, microbiology, ecology, anatomy, and physiology. Students participate in laboratory work and field study during this preparatory course.

MAGNET CHEMISTRY- Grade 9 or 10 Required (SCI2055A/SCI2055B)

Students study the materials of our environment, their properties, and the ways in which they react with each other. Through a synthesis of laboratory work and descriptive and theoretical chemistry, students gain factual knowledge drawn from the whole field of chemistry. Topics include properties of matter, atomic theory, chemical bonds and reaction kinetics, gases, periodicity and radioactivity, organic chemistry, solutions and solubility, thermodynamics, oxidation-reduction reactions, equilibrium systems, and electrochemistry.

IB BIOLOGY 1 - Grade 11 - Required for IB Biology SL or HL (SCI2081A/SCI2081B)

IB Biology offers extensive laboratory experiences and emphasizes critical analyses of scientific information, evaluation of biological knowledge regarding problems facing mankind, and synthesis of biological information from different areas of the field. IB Biology 1 prepares students for IB Biology 2 and may prepare the students for the Biology SAT II, and the AP Biology exam with additional self-study and guided-study support.

IB BIOLOGY 2 – Grade 12 - Required for IB Biology SL or HL (SCI2082A/SCI2082B)

IB Biology 2 builds on and extends the topics of IB Biology 1. Additional topics and further exploration of topics include statistical analysis, cells, the chemistry of life, genetics, ecology and evolution, nucleic acids and proteins. Students will participate in a variety of laboratory experiences, use advanced lab technology, and conduct field studies. IB Biology HL prepares students for the standard or higher level IB Biology exam and prepares the students for the AP Biology exam.

IB CHEMISTRY 1 - Grade 11 - Required for IB Chemistry SL or HL (SCI2087A/SCI2087B)

IB Chemistry offers extensive laboratory experiences while exploring the materials of our environment, their properties, and the ways in which they react with each other. Topics include stoichiometry, atomic theory, periodicity, bonding, states of matter, energetics, kinetics, equilibrium, acids and bases, oxidation and reduction, organic chemistry, and optional studies selected from a prescribed list. This course prepares students for IB Chemistry 2, and the AP Chemistry exam with additional self-study and guided-study support.

IB CHEMISTRY 2 – Grade 12 Required for IB Chemistry SL or HL (SCI2089A/SCI2089B)

IB Chemistry 2 builds on and extends the topics of IB Chemistry 1. Students combine academic study with the acquisition of practical and investigational skills through the experimental approach. Students learn the chemical principles that underpin both the physical environment and biological systems through the advanced study of quantitative chemistry, periodicity, and kinetics. This course prepares students for the standard or higher level IB Chemistry exam, the Chemistry SAT II, and the AP Chemistry Exam.

IB ENVIRONMENTAL SYSTEMS AND SOCIETIES SL – Grade 11 or 12 (SCI2090A/SCI2090B)

IB ESS is designed to provide students with a coherent perspective of the interrelationships between environmental systems and societies; student attention is constantly drawn to their own relationship with their environment and the significance of choices and decisions that they make in their own lives. The course approach is conducive to students evaluating the scientific, ethical, and socio-political aspects of issues, and provides students with a body of knowledge, methodologies, and skills that can be used in the analysis of environmental issues at local and global levels. The course prepares students for the standard level IB Environmental Systems and Societies and the AP Environmental exam.

IB PHYSICS 1 - Grade 11 Required for IB Physics SL or HL (SCI2096A/SCI2096B)

In IB Physics 1, students investigate physical laws and theories, relationships of physical phenomena, and interrelationships of physics and other fields of human endeavor. Topics include vector mathematics, kinematics, dynamics, energy, momentum, waves, optics, thermodynamics, and some aspects of historical physics. IB Physics 1 prepares students for IB Physics 2. IB Physics 1 prepares students for the AP Physics C: Mechanics exam with additional self-study and guided-study support.

IB PHYSICS 2 - Grade 12 Required for IB Physics SL or HL (SCI2097A/SCI2097B)

IB Physics 2 builds on and extends the topics of IB Physics 1. Additional topics include relativity, electricity and magnetism, quantum physics, atomic physics, astrophysics, and additional aspects of historical physics. Students may take either the higher level or standard level IB Physics exam. Students are prepared to take the AP Physics C: Electricity and Magnetism exams after IB Physics 2.

AP PHYSICS 1 – Elective (SCI2072A/SCI2072B)

Students will explore and build upon physics concepts while going into greater detail in content and laboratory investigations. Students explore Newtonian mechanics, including rotational dynamics and angular momentum, work, energy, power, and mechanical waves and sound. Electric circuits will be introduced.

IB SPORTS, EXERCISE AND HEALTH SCIENCE – Grade 11 or 12 Elective (SCI2085A/SCI2085B)

NGSS Aligned. Open to all 11th and 12th grade students. IB Sports Exercise and Health Science courses prepare students to take the International Baccalaureate Sports Exercise and Health Science exam at the standard level. This course is designed to provide students with an understanding of the science of physical performance. Course topics may include anatomy and physiology, biomechanics, psychology and nutrition, and the measurement and evaluation of human performance.

IB Computer Science

IB Computer Science is an IB Group 4 subject. However, IB CS is only permitted to satisfy Group 6 elective requirements and may not be used in lieu of a Group 4: Experimental Science in the student's two-year IB Diploma Plan.

IB COMPUTER SCIENCE 1 (SL)- Grades 11 or 12, OPEN ENROLLMENT, (ITC2004A/ITC2004B)

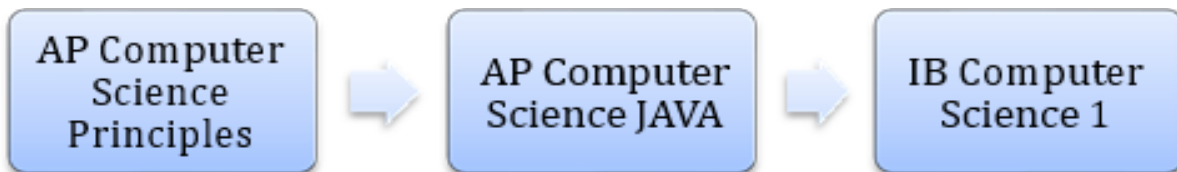
IB Computer Science focuses on problem analysis and the use of computers and their applications in every field. The general aims of IB Computer Science are to help students form a realistic view of the role of computers, their applications, and their effect on the quality of life in different societies, to build familiarity with general computer architecture and appropriate aspects of its operation, to promote the ability to develop logical processes and critical analysis in problem solving, to promote acquisition of the practical skills involved in programming. Students prepare for the IB Computer Science exam and portfolio through a project-based learning design cycle, with greater refinement of programming languages and theory in the second year of the course pathway. Students test after 1 year. Prerequisites: Programming 1 or AP JAVA A/B **AND** Foundations of Computer Science or AP Computer Science.

AP COMPUTER SCIENCE PRINCIPLES (TEC2005A/TEC2005B)

This course, offered in partnership with Code. org, advances student understanding of the central ideas of computer science, engaging students in activities that show how computing changes the world. Through a focus on creativity, students explore technology as a means for solving computational problems, examining computer science's relevance to and impact on the world today. This course satisfies the 1.0 state graduation requirement for technology.

AP COMPUTER SCIENCE JAVA (ITC2007A/ITC2007B)

Using the Java language, students explore in-depth work with text files and arrays, abstract data types, recursion, searching and sorting algorithms, and program efficiency. Examination of specified class behaviors, interrelated objects, and object hierarchies are studied. Students may elect to take the A version of the AP computer Science exam upon completion of this course.

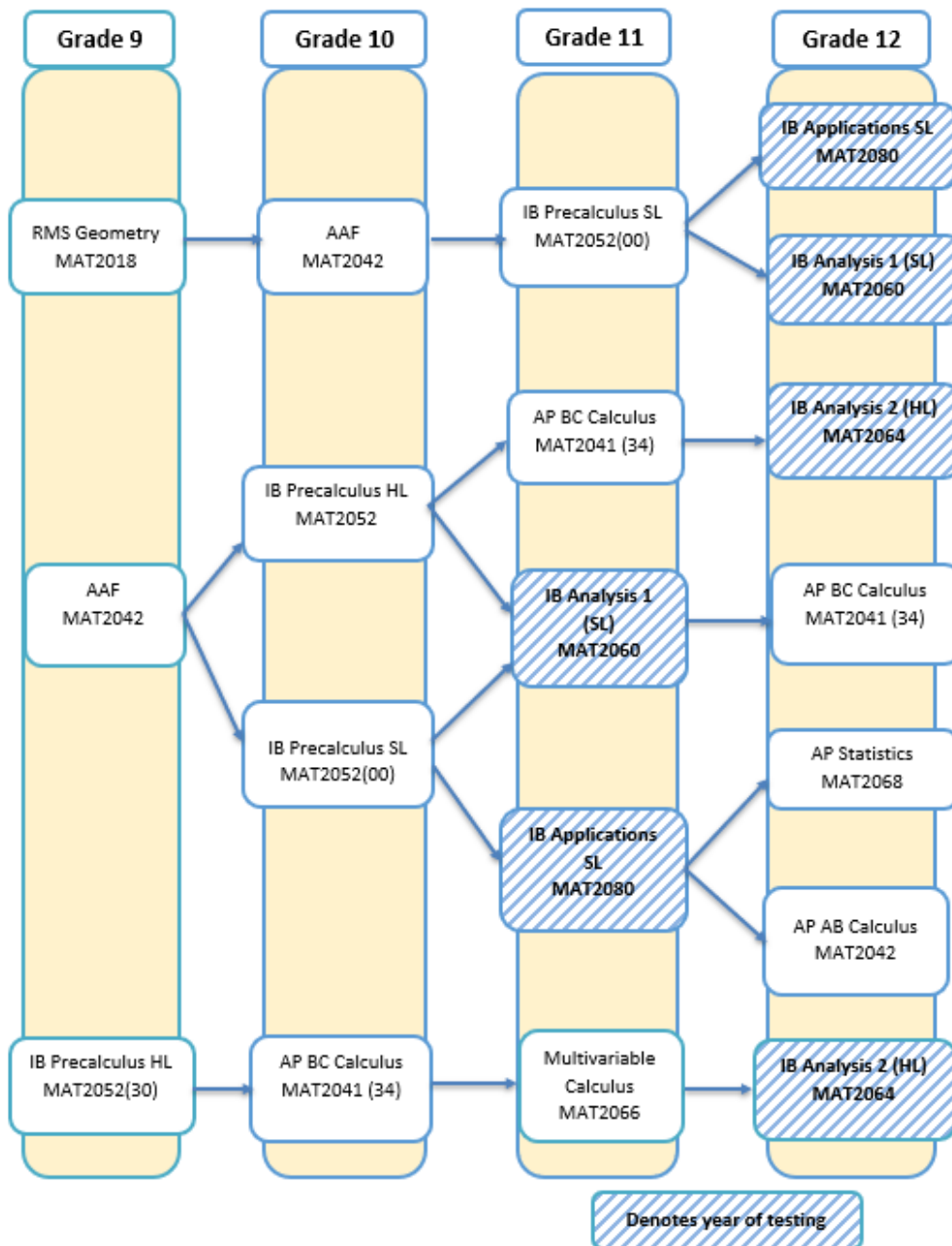


GROUP 5: MATHEMATICS

The general aims of the IB mathematics curricula are to help students

- develop a curiosity and enjoyment of mathematics, and appreciate its elegance and power
- develop an understanding of the concepts, principles, and nature of mathematics
- communicate mathematics clearly, concisely, and confidently in a variety of contexts
- develop logical and creative thinking, and patience and persistence in problem solving to instill confidence in using mathematics

Math Pathways:



RMS GEOMETRY (MAT2018A/MAT2018B)

Combined course with honors geometry. Instruction focuses on the understanding and application of congruence as a basis for developing formal proofs; the relationships among similarity, trigonometry and triangles; the relationships between two- and three-dimensional objects and their measurements; exploration of geometric descriptions and equations for conic sections; and application of geometric concepts in modeling situations.

IB ANALYSIS AND APPLICATIONS OF FUNCTIONS – AAF (MAT2042A/MAT2042B)

Number systems, including complex numbers, are studied. Functions (linear, quadratic, polynomial, rational, exponential, logarithmic, radical, and trigonometric) and conic sections are analyzed. Students study the relevance of the features of those functions/relations, their graphs, and models, to real-world applications. This course is an advanced Algebra 2/Trig course.

IB PRECALCULUS- SL (MAT2052A(30)/MAT2052B (30))

This pre-calculus course builds on the concepts of RMS AAF. Time for review of some of the more advanced topics covered in RMS AAF is built into the course. Advanced trigonometry, vectors, parametrics, and discrete topics are also studied.

IB PRECALCULUS - HL (MAT2052A/MAT2052B)

This advanced precalculus class builds on the concepts of IB AAF. Advanced trigonometry, statistics and probability, series and sequences, complex number applications, vector analysis in two and three dimensions, and polar mathematics are some of the topics covered.

AP BC CALCULUS – required for IB MVC/DiffEq (MAT2041A/MAT2041B)

This AP course is a prerequisite for IB Multi-variable Calculus and Differential Equations. Topics covered include limits, differential calculus, integral calculus, calculus of polar and parametric functions, convergence tests for series and improper integrals, Taylor and Maclaurin series. Upon completion of this course and its pre-requisite courses, students will have covered all of the topics tested on the AP BC Calculus exam and are prepared for the AP BC Calculus exam.

IB MATH APPLICATIONS STATISTICS CALCULUS (MAT2080A/MAT2080B)

This course is designed for students who enjoy describing the real world and solving practical problems using mathematics. Those who are interested in harnessing the power of technology alongside exploring mathematical models and enjoy the more practical side of mathematics. Students will take the IB Math Applications SL exam.

**IB MATH ANALYSIS STATISTICS CALCULUS SL
(MAT2060A/MAT2060B)**

This course is intended for students who wish to pursue studies in mathematics at university or subjects that have a large mathematical content; it is for students who enjoy developing mathematical arguments, problem solving and exploring real and abstract applications, with and without technology. With some supplemental review, students will be prepared for the AP AB Calculus exam. Students will take the IB Math Analysis SL exam.

IB MATH ANALYSIS STATISTICS CALCULUS 2 (MAT2064A/MAT2064B)

As a pre-requisite a student must have taken year 1 of IB Math Analysis or BC Calculus. Students will take the IB Math Analysis exam at higher level at the conclusion of this course.

IB MULTI-VARIABLE CALCULUS AND DIFFERENTIAL EQUATIONS (MAT2066A/MAT2066B)

This course is the traditional course that students pursuing a math/science/engineering college majors would take after calculus. Topics covered include three- dimensional calculus, analytic geometry, vector valued functions, using multiple integrals to find volume and surface area, as well as the classical theorems of Green, Stokes, and Gauss. Additionally, students will work with higher order differential equations, solutions using power series, and the Laplace transformation.

GROUP 6: ARTS

The general aims of the IB mathematics curricula are to help students

- explore the diversity of the arts across time, cultures, and contexts
- develop as imaginative and skilled creators and collaborators
- express ideas creatively and with competence in forms appropriate to the artistic discipline
- critically reflect on the process of creating and experiencing the arts
- develop as informed, perceptive, and analytical practitioners
- enjoy lifelong engagement with the arts.

IB ADV MUSIC – OPEN ENROLLMENT. Grade 11 or 12 Required for IB Music SL (ART2079A/ART2079B)

Students learn to recognize the music of various eras and cultures through a detailed study of representative works. The study of musical scores extends students' knowledge of musical fundamentals and theory and comprehension of how the changes in composition styles create the music of different times and places. Prerequisite: AP Music Theory or department approval.

IB FILM 1 – OPEN ENROLLMENT. Grade 11 Required for IB Film SL or HL (ART2110A/ART2110B)

Through the study of film texts and projects in filmmaking and analysis, the IB Film student will explore film history and theory, enabling them to appreciate the multiplicity of cultural and historical perspectives in film. Students will learn to consider a wide variety of film texts, theories, and ideas from the point of view of different individuals, nations, and cultures. IB Film explores a range of creative works in a global context and emphasizes practical production by the student.

IB FILM 2 – OPEN ENROLLMENT. Grade 12 Required for IB Film SL or HL (ART2111A/ART2111B)

IB Film 2 is the second of the two-year sequence that prepares IB students for the IB Film examinations. Students will extend their knowledge of film history and theory and will utilize knowledge of applied film techniques in culminating assessments for the IB examinations. These assessments include film analysis, written and oral, and a reflective and practical portfolio of student work demonstrating the creative process and use of film technique.

IB ART AND DESIGN 1 – OPEN ENROLLMENT. Grade 11 Required for IB Visual Art SL or HL (ART2018A/ART2018B)

Students develop their aesthetic, imaginative, and creative faculties. Emphasis is on visual awareness, multicultural expressions, and historical references. Students begin an expressive verbal and visual journal demonstrating the interrelationship between the student's personal research and studio work.

IB ART AND DESIGN 2 – OPEN ENROLLMENT. Grade 12 Required for IB Visual Art SL or HL (ART2021A/ART2021B)

Students continue to develop their aesthetic, imaginative, and creative faculties. Emphasis is on visual awareness and multicultural expressions as reflected in studio work. Students complete studio work and refine verbal and visual journals begun in IB Art and Design 1 to fulfill the requirements for the standard level or higher level IB Visual Arts assessments. Students are also eligible to submit their portfolio for the AP Studio Art exams.

IB THEATER 1 – OPEN ENROLLMENT. Grades 11 Required for IB Theater SL or HL (ART2126A/ART2126B)

IB Theater explores a range of creative works in a global context and emphasizes practical production by the student. Assessments include a practical play analysis, a reflective and analytical portfolio of their theatrical work, and research that applies theoretical and historical concepts to a contemporary production. On a space-available basis, non-IB advanced theatre students may enroll. Instructor permission is required.

IB THEATER 2 – OPEN ENROLLMENT. Grade 12 Required for IB Theater HL (ART2127A/ART2127B)

IB Theater 2 is the second of the two-year sequence that prepares IB students for the higher level IB theater examination. The two-year sequence consists of five parts: (1) performance skills, (2) world theater studies, (3) practical play analysis, (4) theater production, and (5) an individual project.

Pathways to the IB Diploma – Planning for Four Years

IB Subject Group	Grade 9	Grade 10	Grade 11	Grade 12
	MYP Year 4	MYP Year 5	DP Year 1	DP Year 2
GROUP 1: Language and Literature	English 9	English 10	English 1	English 2 (HL)
GROUP 2: Language Acquisition	Level 2, 3, 4	Level 3, 4, 5	Level 4, 5, 6	Level 5, 6, 7 (if student has not tested SL)
GROUP 3: Individuals and Societies	Government	US History	History 1	History 2 or another Group 3 (if student has not tested SL)
GROUP 4: Experimental Sciences	(Biology) Science by pathway	(Chemistry) Science by pathway	Science by pathway	Science by pathway
GROUP 5: Mathematics	Math by pathway	Math by pathway	Math by pathway	Math by pathway
	Additional subjects and electives		IB Core Requirements and Group 6 or additional subject from Groups 2, 3 or 4	
IB Requirements for Additional Subjects and GROUP 6: Arts	Arts (Visual or Performing)/ Design Technology*	Arts (Visual or Performing)/ Design Technology*/ Elective	TOK (full year)	TOK 2 (1 semester)
	Physical Education	Health* / Elective	IB Group 6 or additional subject from groups 2, 3, 4	IB Group 6 or additional subject from groups 2, 3, 4 (if student has not tested SL)

State of Maryland graduation requirements in Arts, Technology, and Physical Education must be met during grades 9 and 10. Courses marked with an asterisk* are also available online and during MCPS summer school programming. See the county website or school counselor for details on these programs. In a full DP schedule, second semester of 12th grade provides room for students the take the state-required Health course if students have not met this requirement already.