

THE INTERNATIONAL BACCALAUREATE MAGNET PROGRAM

RICHARD MONTGOMERY HIGH SCHOOL

An IB WORLD SCHOOL since 1987

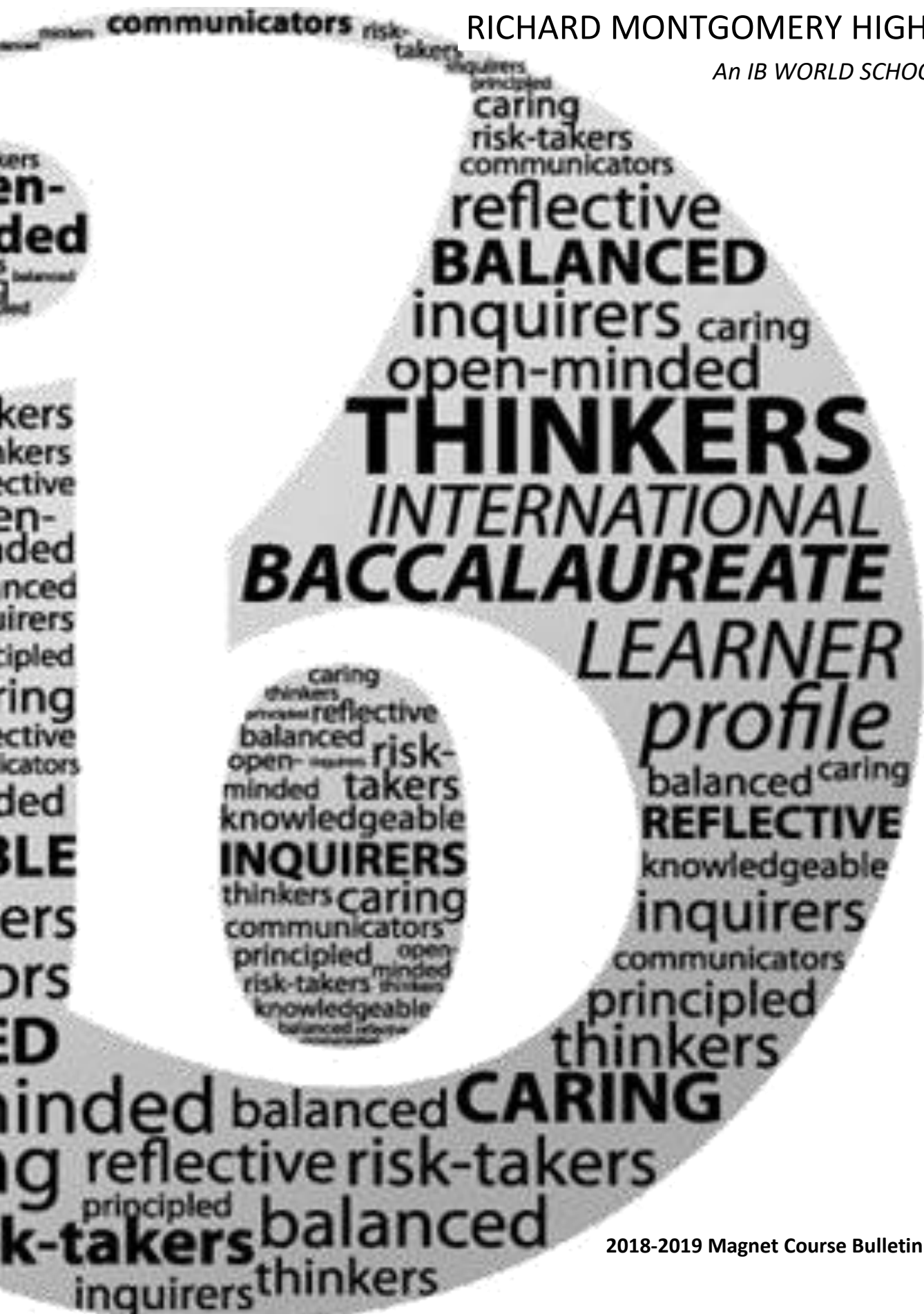


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On the International Baccalaureate Mission and Philosophy

The International Baccalaureate (IB) is more than its educational programs. At our heart we are motivated by a mission to create a better world through education. The IB values its hard-earned reputation for quality, for high standards and for pedagogical leadership, and 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.

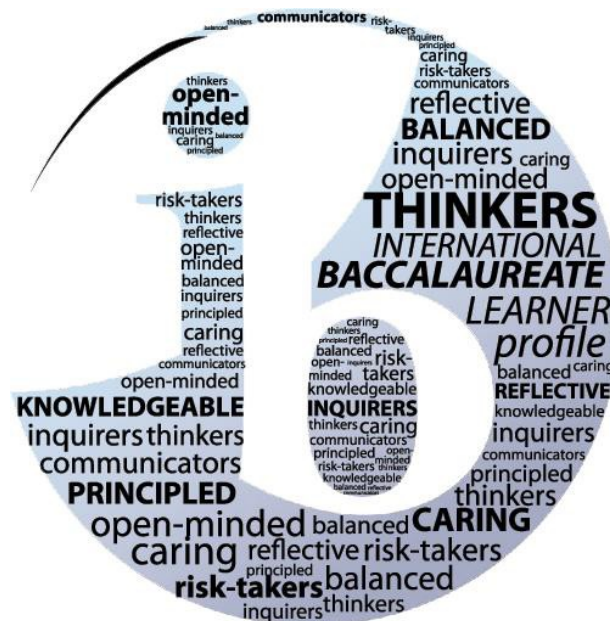
The IB Learner Profile

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 at Richard Montgomery

The International Baccalaureate Magnet (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 Magnet program comprises 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 magnet programs countywide.

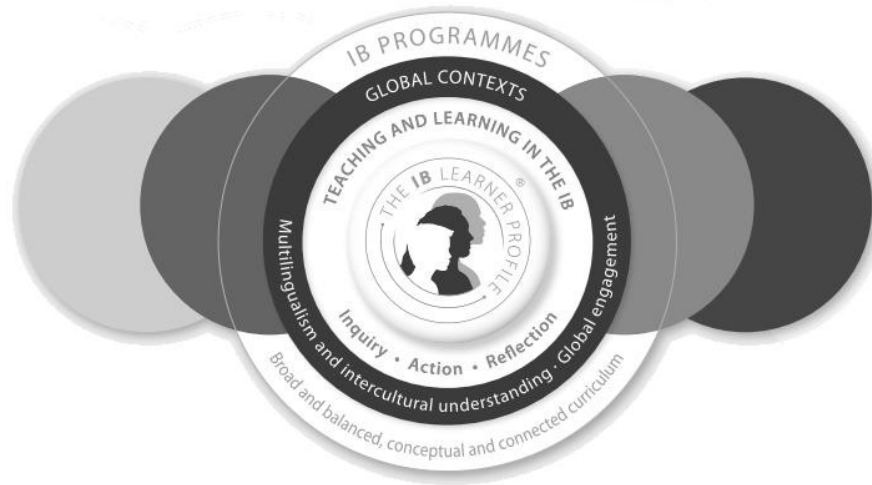
Students who participate in the IB Magnet fulfill the Maryland State Department of Education (MSDE) graduation requirements as well as the IB Diploma requirements. The International Baccalaureate requirements include coursework and passing scores on examinations in all six subjects, satisfying the Creativity, Activity and Service (CAS) activity component, composition of a 3,500-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 Magnet program can earn an IB Diploma, a Maryland High School Diploma, and a Certificate of Merit from the state.

Although there are multiple IB Diploma Programs in Montgomery County Public Schools (MCPS), Richard Montgomery is the only program identified as an application-based Magnet. A four-year cohort model started in 1987, the IB Magnet 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, depth of instruction correspond 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.



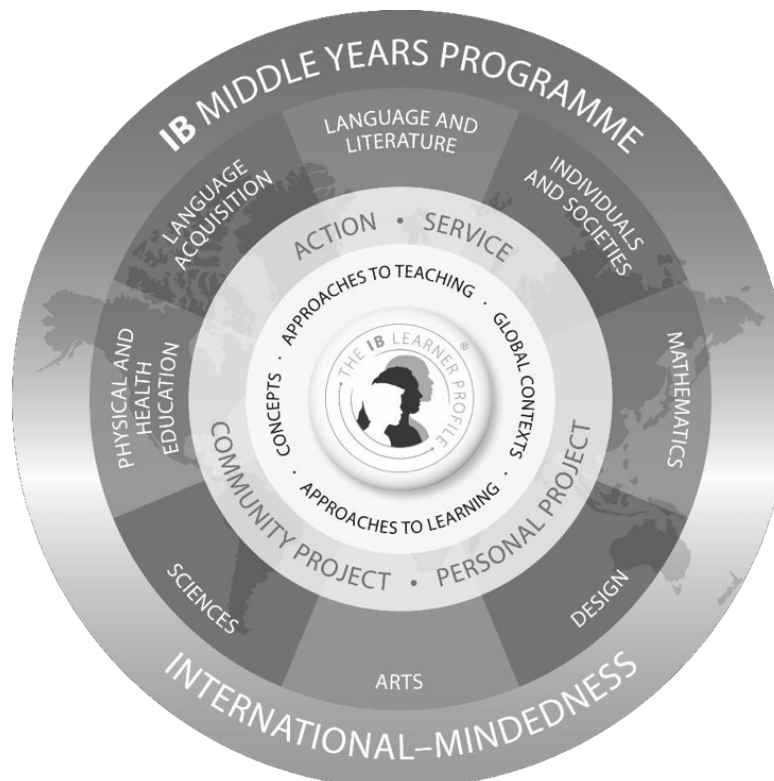
The International Baccalaureate Continuum



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 Magnet 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 Magnet is designed with vertical articulation, grades 9 – 12, in mind, and the Magnet course work is geared towards helping students achieve high marks in the six subject areas as they attempt the Diploma. Consequently, delivery of the IB Middle Years Programme within the Magnet 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	Magnet English 9	Magnet English 10
Language Acquisition	Spanish/French/ Chinese	Spanish/French/ Chinese
Mathematics	Math by pathway	Math by pathway
Sciences	Magnet Biology	Magnet Chemistry
Individuals and Societies	Magnet Government	Magnet US History
Sixth Subject Elective Pathway		
<i>Students will study two of these three areas during the two-year program.</i>		
Arts	Arts	Arts
Technology	Tech	Tech
Physical and Health Education	PE	Health/PE

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 is begun 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 Magnet 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	English	HL
Group 2	Chinese, French, Spanish	SL or HL or A2
Group 3	History	SL or HL
	Psychology	SL
	Economics	SL
	Social Anthropology	SL
	Global Politics	SL
	Philosophy	SL
Group 4	Biology	SL or HL
	Chemistry	SL or HL
	Physics	SL or HL
	Environmental-Systems & Societies	SL
Group 5	Mathematics Studies	SL
	Mathematics	SL or HL
Group 6	Art & Design	SL or HL
	Film	SL or HL
	Theater	SL or HL
	Music	SL
Additional subjects from groups 2, 3 or 4	Computer Science	SL or HL
	Second social science group 3	SL
	Second science group 4	SL or HL
	Second language group 2	SL or HL or A2

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 AWARDED 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		English
Group 2	Language Acquisition (Chinese, French, Spanish)	Language Acquisition (Chinese, French, Spanish)
Group 3	History Economics Social Anthropology Philosophy Psychology Global Politics	History
Group 4	Biology Physics Chemistry Environmental Systems & Societies	Biology Physics Chemistry
Group 5	Math Studies Mathematics	Mathematics
Group 6	Visual Arts Film Music Theatre	Visual Arts Film Theatre
Additional subjects to fulfill a Group 6 requirement	Computer Science A SECOND Group 2, 3, or 4	Computer Science A 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 discipline. 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. To understand how the full IB Diploma is awarded, please review the **Summary of IB Diploma Attainment Requirements** on the following page.

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				

THE INTERNATIONAL BACCALAUREATE MAGNET at Richard Montgomery High School

COURSE OFFERINGS for the Magnet 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 MAGNET (RMS) ENGLISH 9 (811000/811100)

Magnet English 9 begins the four-year sequence of IB English courses. Throughout the first year, 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 MAGNET (RMS) ENGLISH 10 (811200/811300)

In Magnet 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 learned in Magnet English 9 through the study of short stories, Shakespearean drama, and modern American literature. In the second semester, students examine modern American poetry, drama and fiction and complete a personal study of an author. This course prepares students for the kind of assessments that follow in the IB English courses.

IB ENGLISH LITERATURE 1 - Grade 11 Required for IB English Literature HL (102600/102700)

Students in IB English Literature 1 begin the first year of a comprehensive two-year Literature study which encourages students to appreciate the artistry of literature around the world, and cultivates and nurtures their development as readers and thinkers with an emphasis on the ability to reflect critically on the texts studied. Literature studied include 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 - Grade 12 Required for IB English Literature HL (102800/102900)

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.

Level 3

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. Students are introduced to themes required by the IB Program. The Montgomery County Public Schools program of study world language objectives are combined with the themes required by the IB Program.

Level 4

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

Level 5

IB Level 5 Language B courses complete the preparation for students for the Standard Level IB world language and culture examination. Emphasis is placed on reading comprehension, interpretation, analysis, and oral, listening and writing proficiency. The course follows IB prescribed themes. Students are prepared for the Standard level IB exam and the Advanced Placement Language Exam after completing this course.

Level 6

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.

Language A: Language and Literature

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 this 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.

Course Codes:

RMS Chinese 3	820400/820500		
RMS French 3	821400/821500		
RMS Spanish 3	822400/822500		
IB Chinese 4	165100/165200	IB Chinese 6	165500/165600
IB French 4	161900/162000	IB French 6	162900/163000
IB Spanish 4	175100/175200	IB Spanish 6	175500/175600
IB Chinese 5	165300/165400	IB Spanish 7	166000/166400
IB French 5	162700/162800	IB French 7	165800/166200
IB Spanish 5	175300/175400	IB Chinese 7	165700/166100



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

IB MAGNET (RMS) GOVERNMENT - Grade 9 Required (835000/835100)

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.

IB MAGNET (RMS) US HISTORY - Grade 10 Required (835200/835300)

Students survey United States history from the Colonial era to the Cold War. The college-level work prepares students for the 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- Grade 11 Required (223000/223100)

Students survey European/Russian and world history from the Renaissance (1450) through the Age of the Enlightenment to 1900. Emphasis is on the rise of nation states, scientific revolution, colonialism, political and industrial revolution, the "New Imperialism," unification movements, and the long-term causes of World War 1. **Note:** students who do not continue into IB History 2 for the standard or higher level IB History exam as their Group 3 requirement must complete an ancillary assignment to earn State Graduation Credit in Modern World History. This assignment is completed during IB History 1.

Electives:

IB HISTORY 2- Grade 12 Required for IB History SL or HL (240300/240400)

Students study Twentieth Century Europe/Russia from 1900 to the present. Emphasis is on causes, practices, and effects of war; rise of single-party states; Europe/Russia between the Wars; economic developments; the work of international organizations and minorities in the modern state; nationalist and independence movements: decolonization and problems of new nations; social change; religion and politics; and East-West relations after 1945. Students must take both IB History 1 and 2 to sit for the SL or HL exam. Students may take either the higher level or standard level exam.

IB ECONOMICS - Grade 11 or 12 (223400/223500)

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 the 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 Economics exam.

IB SOCIAL and CULTURAL ANTHROPOLOGY - Grade 11 or 12 (224200/224300)

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 Social Anthropology examination.

IB PHILOSOPHY - Grade 11 or 12 (223700/223800)

IB World 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 PSYCHOLOGY - Grade 11 or 12 (223200/223300)

This course focuses on the nature of human beings, appreciation of psychology, and various methods of psychological inquiry. Students study human behavior through behavioral, cognitive, humanistic/ phenomenological, and psychodynamic perspectives. Students study research design, methods, statistics, and ethical issues in psychological research and application. This course prepares students for the standard level Psychology exam and the AP Psychology exam.

IB GLOBAL POLITICS - Grade 11 or 12 (201300/201400)

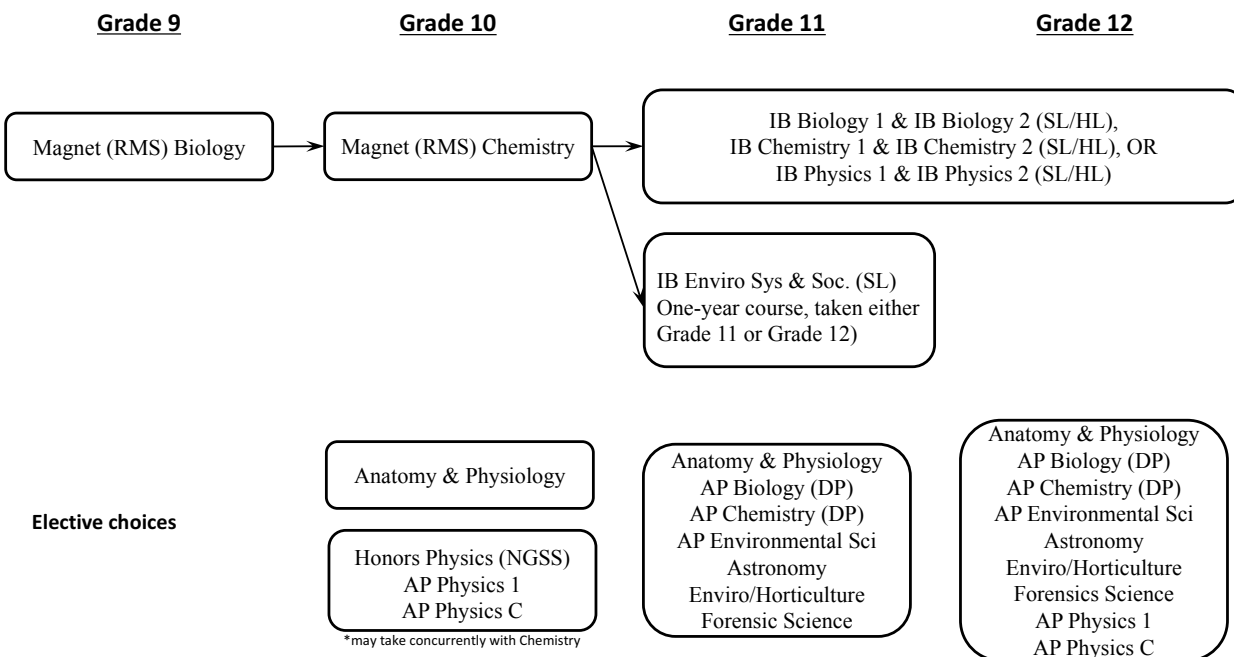
IB Global Politics explores fundamental political concepts such as power, liberty and equality, in a range of contexts and at a variety of levels. Students develop an understanding of the local, national, international and global dimensions of political activity, as well as allowing them the opportunity 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.



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



- All students must complete 3 NGSS aligned courses by 11th grade as preparation for the Maryland Integrated Science Assessment (MISA).
- Level placement is based on teacher recommendation.

Magnet students are expected to follow one of the possible IB Science pathways listed above.

MAGNET (RMS) BIOLOGY - Grade 9 Required (840000/840100)

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.

AP PHYSICS 1 - Elective (389100/389200)

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, and power; and mechanical waves and sound. Electric circuits will be introduced.

MAGNET (RMS) CHEMISTRY- Grade 10 Required (840200/840300)

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 (362300/362400)

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 (362500/362600)

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, 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 (374600/374700)

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 (375500/375600)

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 (375700/375800)

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.

IB PHYSICS 1 - Grade 11 Required for IB Physics SL or HL (384400/384500)

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 and Electricity exams with additional self-study and guided-study support.

IB PHYSICS 2 - Grade 12 Required for IB Physics SL or HL (384600/384700)

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: Mechanics and Electricity exams after IB Physics 2.

IB COMPUTER SCIENCE SL – 11 or 12 (281800/281900)

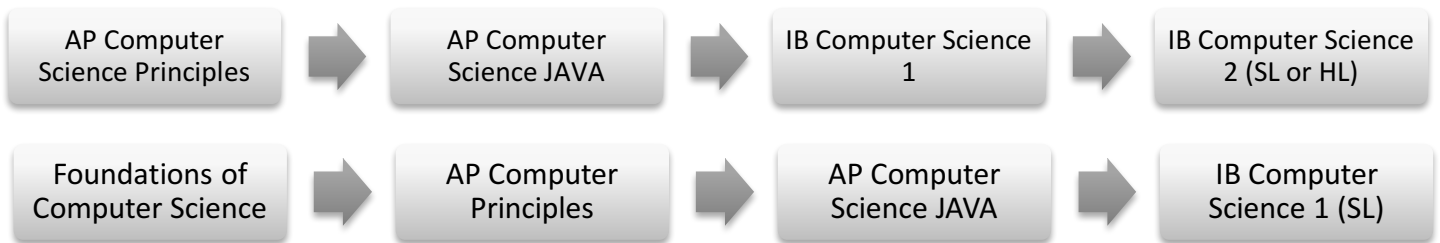
IB COMPUTER SCIENCE HL – 12 only (282000/282100)

AP COMPUTER SCIENCE JAVA (290100/290200)

AP COMPUTER SCIENCE PRINCIPLES (292400/292500)

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 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.



**Foundations of Computer Science and AP Computer Science Principles satisfy the 1.0 state graduation requirement for Technology*

GROUP 5: MATHEMATICS

The aims of the IB mathematics curricula are to help students to develop the following:

- an understanding of mathematics as a discipline
- an attitude favorable to subsequent learning and use of the subject
- the knowledge and skills to solve mathematical problems
- the ability to apply mathematical skills in a variety of ways

Students in Grade 9 select the appropriate mathematics course based on prior coursework in middle school, the placement exam. The flow chart on the next page shares some of the typical pathways that IB Magnet students take in mathematics.

RMS GEOMETRY (320800/320900)

Students study logic, methods of proof (direct/indirect, coordinate), constructions, loci, and transformational geometry. Students formalize their understanding of geometric concepts, including congruence and similarity, circle chords, secants and tangent segments, parallel and perpendicular lines, angle and side measures in polygons, proofs, logic, transformations, the Pythagorean Theorem, constructions, coordinate geometry, and surface area and volume of solids. The topics and pace of this advanced geometry course prepares students to continue to IB AAF.

IB ANALYSIS AND APPLICATIONS OF FUNCTIONS - AAF (330600/330700)

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 these functions/relations, their graphs, and models, to real-world applications. This course is an advanced Algebra 2/Trig course with the topics, pace, and rigor to prepare students to continue to IB Pre-Calculus SL or HL.

IB PRECALCULUS - SL (342000/342400)

This pre-calculus class builds on the concepts of IB AAF. Time for review of some of the more advanced topics covered in IB AAF is built into the course. Advanced trigonometry, vectors, parametrics, and discrete topics are also studied. The topics, pace, and rigor of this pre-calculus course prepares students to continue to IB Math Studies **OR** IB Standard Level Mathematics.

IB PRECALCULUS - HL (342030/342430)

This advanced pre-calculus 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. The topics, pace, and rigor of this advanced pre-calculus course prepares students to continue to AP BC Calculus or IB Standard Level (AB Calculus).

IB MATH STUDIES STANDARD LEVEL – 11 or 12 only (341000/341800)

This IB course reviews the topics in IB Pre-calculus necessary for success in calculus before introducing differential calculus. Statistics, probability, logic, and financial math are also studied. Upon completion of this course and its pre-requisite courses, students will have covered all of the topics tested on the IB Math Studies SL exam.

IB MATHEMATICS STANDARD LEVEL - 11 or 12 only (345400/345500)

This IB course extends IB Pre-Calculus topics necessary for success on the IB Standard Level Exam as well as on the AP AB Calculus exam. Topics covered include limits, differential calculus, and integral calculus. The topics covered correspond to one college semester of calculus. Upon completion of this course and its pre-requisite courses, students will have covered all of the topics tested on IB Standard Level Math exam and the AP AB Calculus exam. Students are prepared to sit for the standard level IB Mathematics exam, as well as the AP AB Calculus exam

AP BC CALCULUS – required for HL Mathematics (349100/349200)

This AP course is a prerequisite for higher level IB Mathematics. Topics covered include limits, differential calculus, integral calculus, calculus of polar and parametric functions, convergence tests for series and improper integrals, Taylor and

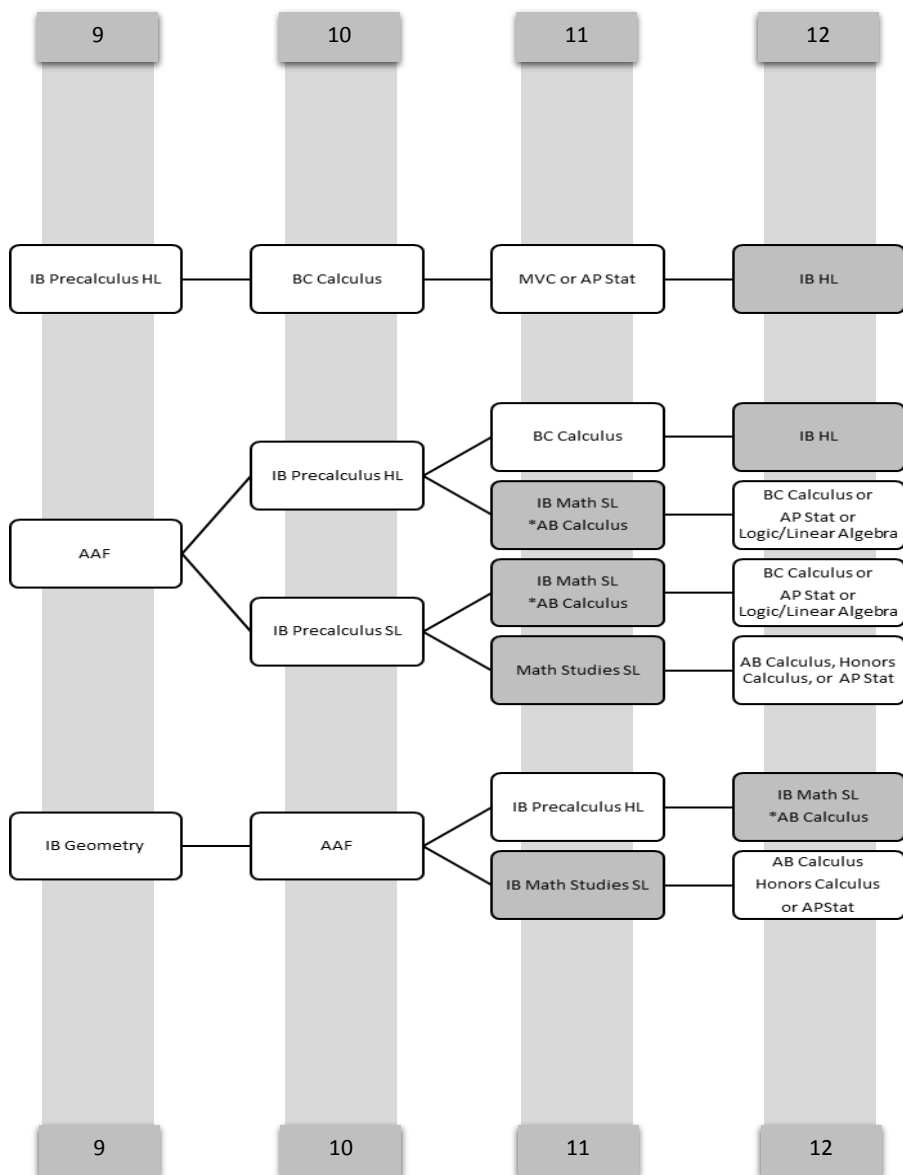
MacLaurin series. Upon completion of this course and its pre-requisite courses, students will have covered all of the topics tested on the AP BC Calculus exam and the required content to continue into higher level IB Mathematics. Students are prepared for the AP BC Calculus exam.

MULTI-VARIABLE CALCULUS AND DIFFERENTIAL EQUATIONS – helpful for HL Mathematics (304800/304900)

This course is the traditional course that students pursuing a math/science/engineering college majors would take after calculus. It may be taken in preparation for, or concurrently with, IB Higher Level Math. 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 transformations.

IB MATHEMATICS HIGHER LEVEL – Grade 12 only (349600/349700)

This course gives students an introductory experience in a variety of college level math courses after calculus. Topics covered include discrete mathematics, complex analysis, differential equations, advanced statistics and probability, and further calculus with power series. Upon completion of this course and its pre-requisite courses, students will have covered all of the topics tested on the higher level IB Mathematics exam.



GROUP 6: ARTS

IB FILM 1 – Grade 11 Required for IB Film SL or HL (770200/770300)

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 Studies explores a range of creative works in a global context and emphasized practical production by the student.

IB FILM 2 - Grade 12 Required for IB Film SL or HL (720400/720500)

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 - Grade 11 Required for IB Visual Art SL or HL (610200/610300)

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 - Grade 12 Required for IB Visual Art SL or HL (610700/610800)

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 Art exam.

AP MUSIC THEORY (6545/6546)/IB ADVANCED MUSIC (656700/656800)*

IB Advanced Music and AP Music Theory is a two-year sequence during which 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 music fundamentals and theory and comprehension of how the changes in composition styles create the music of different times and places. These two courses prepare students for the standard level IB music exam and the AP Music Theory exam. **Please note that these courses are offered in rotation. AP Music Theory is not offered in 2018-19.*

IB THEATER 1 - Grades 11 Required for IB Theater SL or HL (807100/807200)

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. At the end of IB Theater I, students are prepared for the standard level IB examination. On a space-available basis, non-IB advanced theatre students may enroll. Instructor permission is required.

IB THEATER 2 - Grade 12 Required for IB Theater SL or HL (807300/807400)

IB Theater II 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.

IB CORE COURSE REQUIREMENTS

THEORY OF KNOWLEDGE 1/EXTENDED ESSAY

(Grade 11 - 201100/201200)

This required course combines the content of Theory of Knowledge 1 with support for IB students who are launching the extended essay process. In the fall, most of the class time is devoted to Theory of Knowledge with occasional time allocated for instruction in research techniques. As the year progresses, more and more emphasis is placed on independent work as students refine their topics, conduct their research, and create a first draft of their extended essays. Students earn a full credit for this course.

THEORY OF KNOWLEDGE 2

(Grade 12 – 200800) First semester only

In this required course students first investigate the system of knowledge applied by historians, and then turn to value judgments and knowledge, focusing on moral, political, and aesthetic judgments. The final topic investigates the differences among belief, opinion, faith, knowledge, and truth.

EXTENDED ESSAY

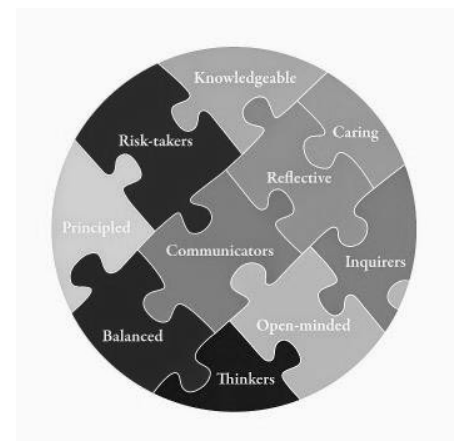
All candidates for the International Baccalaureate Diploma must submit an extended essay on a topic of their choice in one of the subjects of the IB curriculum. Students are supervised by a teacher qualified to teach the subject of their essays. The essays are graded by examiners appointed by the Chief Examiner of each subject in the IB Office in Cardiff, Wales.

CREATIVITY, ACTIVITY, SERVICE

Candidates for the IB Diploma must participate in the Creativity, Activity, and Service (CAS) program to earn the full IB Diploma. The purpose of this requirement is to develop well-rounded students. The CAS activities may be extracurricular activities at RMHS or in the community. In the spirit of the IB design, students must provide direct community service. Activities for which students are paid or receive academic credit may not be used to fulfill the CAS requirement. CAS motivates and promotes learning by doing, and learning about self and others through collaborative work, opportunities to identify areas of growth, personal reflection and the cultivation of the IB Learner Profile skills.

The CAS Programme aims to develop students who:

- enjoy and find significance in a range of CAS experiences
- purposefully reflect upon their experiences
- identify goals, develop strategies and determine further actions for personal growth
- explore new possibilities, embrace new challenges and adapt to new roles
- actively participate in planned, sustained, and collaborative CAS projects
- understand they are members of local and global communities with responsibilities towards each other and the environment



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 other Group 3
GROUP 4: Experimental Sciences	Biology	Chemistry		
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) / Health*
	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

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.

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