

BROOKLYN FRIENDS SCHOOL
UPPER SCHOOL CURRICULUM GUIDE, 2017-18

INTRODUCTION TO THE UPPER SCHOOL PROGRAM

The Brooklyn Friends Upper School offers an intellectually challenging academic program that develops students' critical and creative thinking abilities. Our small class sizes and dedicated, experienced faculty ensure that students receive individualized attention, giving them the support, challenge, and encouragement they need to reach their fullest potential.

Our 9th and 10th grade program emphasizes intellectual challenge, community building, positive study habits, effective time management, and strong communication skills. Rigorous and engaging courses in English, Mathematics, Science, History, World Languages, and the Visual and Performing Arts are complemented by classes in Health, Study Skills, and Service Learning, as well as introductions to Quakerism and Service Learning. In both 9th and 10th grades, students choose from a wide array of offerings in the Visual and Performing Arts, and have the opportunity to perform in the school musical, play, dance concert, and musical ensembles. All 9th and 10th graders follow the same program in English and Science, while World Language placements are based on students' previous experience in those subjects. All 9th graders take the same math course, and in 10th grade students take either an Honors or Standard Math 10 course that focuses on preparing them for their 11th grade IB curriculum. In History, the 9th grade Western Civilization course leads into our Intensive Studies program in 10th grade, in which students choose two semester-long courses in an area of special interest.

With the close guidance of the Upper School academic administration, students design a customized program of study for 11th and 12th grades, choosing from an array of International Baccalaureate and other courses. The flexibility of our offerings means that students can follow individualized courses of study that meet their needs, respond to their interests, and stretch their abilities, preparing them for college-level study in a wide variety of fields. Despite our small size, we are able to offer at least two course or level options in each academic subject, including an especially broad menu of electives in the arts.

The International Baccalaureate Diploma Program

Brooklyn Friends is proud to be an International Baccalaureate (IB) World School, offering the Diploma Program for students in 11th and 12th grades. This internationally recognized curriculum consists of challenging two-year courses in English, Mathematics, History, Science, World Languages, and the Arts; in all IB courses, the focus is on developing critical thinking skills, and emphasis is placed on how students learn. IB courses are active, thought-provoking, and move far beyond memorization of content, preparing students extremely well for college-level study. Supported by a comprehensive and creative assessment program, the IB Diploma Program is held in high regard by colleges and universities, and our students have been admitted to some of the most prestigious institutions in the United States and around the world.

Student choice is central to the design of Brooklyn Friends School's IB program: students can opt to take individual IB courses as part of their individualized curriculum, or they can choose to take IB courses in every subject and become candidates for the IB Diploma, in addition to their Brooklyn Friends School diploma.

According to the International Baccalaureate Organization, the Diploma Program prepares students for effective participation in a rapidly evolving and increasingly global society as they acquire breadth and depth of knowledge and understanding, studying courses from 6 subject groups; develop physically, intellectually, emotionally, and ethically; and develop a positive attitude toward learning that will prepare them for higher education. In addition to the six major subject areas, core components of the Diploma Program encourage students to make connections across traditional academic disciplines and explore the nature of knowledge through a unique Theory of Knowledge course, undertake in-depth research into an area of interest through the lens of one or more academic disciplines in the Extended Essay, and enhance their personal and interpersonal development through the co-curricular Creativity, Action and Service program. For more information about the IB Diploma Program at Brooklyn Friends School, please see our website.

GRADUATION REQUIREMENTS

- English – 4 years
- Mathematics – 4 years
- History – 4 years
- Science – at least 3 years (*Biology, Chemistry, and Physics or Environmental Systems*)
- World Languages – at least 3 years
- Visual and Performing Arts – at least 3 years
- Physical Education – 4 years
- Health – 1 semester
- Study Skills – 1 semester
- 11th/12th grade Philosophy course – at least 1 semester
- Design and Technology - 1 semester
- Completion of CAS requirements

UPPER SCHOOL CURRICULUM BY DISCIPLINES

ENGLISH

Course Offerings:

9 Semester 1: The Hero's Journey: Finding Home

9 Semester 2: The Hero's Journey: Finding Home

10 Semester 1: Literature Concentrations

10 Semester 2: Literature Concentrations

11/12: IB English Literature SL *or* IB English Literature HL

Grade 9: Youth In Society

9th grade English, "The Hero's Journey" is a foundational survey course designed to build the essential language skills of reading, writing, speaking, and listening. Students are introduced to short fiction, non-fiction, drama, and poetry featuring diverse classical and contemporary voices. The curriculum addresses a range of fundamental writing skills through a workshop format. Students produce myriad writing assignments, including expository essays, commentaries, and journal reflections in response to major works, as well as persuasive and creative writing. There is intensive attention to writing mechanics, grammar, structure, and important usage conventions that enhance effective expression, and students are introduced to the conventions of good scholarship with an overview of MLA (Modern Language Association) documentation. Vocabulary development and the study of grammar and usage are addressed in the context of student writing, as well in the literature we read.

The first semester, "The Hero's Journey: Finding Home," centers around the study of *The Chosen*, *The Odyssey*, *Catcher in the Rye*, *Fun Home*, and selected poetry and short stories. Students develop their close-reading and critical thinking skills through passage analysis, as well as maker's space projects and creative writing assignments that allow students to hone their voices as imaginative storytellers, while demonstrating nuanced understanding of the works studied.

The second semester, "The Hero's Journey: New Territories," pursues themes discovered in the first semester, as well as introducing new ones, with focused studies of *Twelfth Night*, *Their Eyes Were Watching God*, *Rime of the Ancient Mariner*, and additional poetry and short stories. Students sharpen their close-reading and critical thinking skills through continued passage analysis and poetry commentary, as well as a longer, scaffolded argument-based essay.

Grade 10: Literature Concentrations

In 10th grade English, students take two semester-long ‘Concentrated Study’ courses. The concentrations have thematically distinct focuses, but students should expect similar experiences in terms of the genres they encounter (poetry, novel, drama, essay/short story), the skills they practice, the major assessments they write, and the preparation they receive for the 11th/12th grade IB program.

Students will select Concentrated Study in order of preference. Classes will be created considering student preferences, class size, and having each student learn from two teachers.

Fall Semester

- *Based on a True Story* looks at the ways writers use real people, places, and historical events to inspire works of fiction. Through texts including Tim O’Brien’s *The Things They Carried*, Luis Valdez’s play *Zoot Suit*, poems by Wendy Rose, Elizabeth Alexander, and Carol Ann Duffy, and essays by E. B. White (as well as his children’s novel, *Charlotte’s Web*), we will explore what it means for authors to tell—or twist—the truth.
- *Border Crossers* will look at texts that involve crossing a variety of borders: between countries, between genres, even between the real and imaginary worlds. This class will explore what happens to characters when they leave or are forced out of their familiar settings—and what happens to us, as readers, when we encounter the unfamiliar in literature. We will read Anne Carson’s poem/novel/myth *The Autobiography of Red*, Jhumpa Lahiri’s novel *The Namesake*, Tim O’Brien’s novel/memoir *The Things They Carried*, and Luigi Pirandello’s absurdist play *Six Characters in Search of an Author*.
- *Crime, Conscience, Courage, and Consequence* Punctuating the paradoxical potential of language, its awful power to fight *and* to perpetuate injustice, novelist Toni Morrison declared that “*definitions belong to the definers.*” This course explores how subjective notions of Truth, Crime, Punishment, Justice, Morality, and Reconciliation reflect the authority, biases, and identities of individuals, institutions, and societies who have the power to define with historical, political, economic, racial, and psychological repercussions. Our readings take us from Russia to France to Algeria to Greece to the United States. Featured works include *The Stranger* and *Antigone*; essays by Ralph Ellison, James Baldwin, Joan Didion, Henry David Thoreau, Moustafa Bayoumi, Cornel West, Ta-Nehisi Coates, Chimamanda Adichie, and Kamel Daoud; and poetry by Gwendolyn Brooks, Lucile Clifton, Emma Lazarus, Langston Hughes, Pico Iyer, and Barbara Makhalisa.
- *Rules of Romance* will explore the codes, expectations, and mores of romantic relationships as experienced in the societies examined in William Shakespeare’s *Much Ado About Nothing*, Jane Austen’s *Pride and Prejudice*, the essays of Aziz Ansari and Dan Savage, and selected poetry. By investigating the rules of romance as depicted in these works, we will discover the larger commentaries they deliver about human nature, humor, free will, and gender expectations.

- *Wonder Women* will investigate and celebrate women as central figures in literature. We will begin by exploring notions of feminism across centuries with Geoffrey Chaucer's "The Wife of Bath's Tale" and Chimamanda Ngozi Adichie's 2014 essay, "We Should All Be Feminists." We will examine the challenges a single woman experiences in seeking fulfillment in Zora Neale Hurston's *Their Eyes Were Watching God*, the struggles women face against the patriarchy in Margaret Atwood's novel, *The Handmaid's Tale*, and the power of women to organize and effect change in Aristophanes' comedy, *Lysistrata*. Short stories and poetry by such authors as Flannery O'Connor, Adrienne Rich, and Audre Lorde will round out our study of the literary odysseys of women.

Spring Semester

- *Everyday Dystopias* will explore what happens when ideal worlds become nightmares for the characters who live there. This class will start with classic dystopian short stories from Shirley Jackson, Ursula LeGuin, and others. Our focus will then turn to subtler, more "everyday" dystopias, examples of the American dream gone wrong. Works will include Arthur Miller's play *The Crucible*, about the witch hunts in Puritan America; Claudia Rankine's prose poem, *Citizen*; Ralph Ellison's novel *Invisible Man*, about a young black man coming of age in the American South and New York City; and episodes from the contemporary British/American television series *Black Mirror*.
- *Funny Ha-Ha, Funny Strange: Comedy in Literature* will explore the vast range of humor in literature, from "funny ha-ha" to "funny strange." Beginning with an examination of Aristotle's definitions of comedy and tragedy in *Poetics*, we will then dive into the raunchy humor of "The Miller's Tale" in Geoffrey Chaucer's *The Canterbury Tales*, comedy of manners in Moliere's play, *The Misanthrope*, satire in Voltaire's *Candide*, and absurdism in Kurt Vonnegut's *Slaughterhouse-Five*. Finally, we will look at writing from contemporary comedians such as Tina Fey, Issa Rae, and Bassem Youssef to help us understand how comedy subversively speaks truth to power.
- *Home to Harlem: The Harlem Renaissance* This course explores the The Harlem Renaissance, a remarkable 1920s and 1930s political and artistic phenomenon, in a period sometimes referred to as the Jazz Age. Our journey will begin with unpacking major myths and misconceptions regarding its genesis and evolution. After exploring key 19th and 20th century antecedents including the "Great Migration," we shall read poetry, fiction, and non-fiction (essays) while studying some important artistic and political manifestations of the Harlem Renaissance (i.e. photography; painting; dance, and some music).
- *Power and Protest, Public and Private* examines power—who has it, who loses it, and what it does to people. We will read texts that explore power, disempowerment, and resistance in the public sphere as well as in the privacy of the home, including Chinua Achebe's *Things Fall Apart*, William Golding's *Lord of the Flies*, Henrik Ibsen's *A Doll's House*, short stories by writers such as Nathan Englander and Cynthia Ozick, and poems by Mahmoud Darwish, Emma Lazarus, and Langston Hughes, with an additional study of the tradition of protest songs.

- *The Spooky, Supernatural, and Surreal* will delve into literature's long history of successfully abandoning the strict rules of reality to unveil greater truths about the human experience. We will explore William Shakespeare's *The Winter's Tale*, Yoko Ogawa's *Revenge: Eleven Dark Tales*, Octavia Butler's *Fledgling*, and selected poems to discover the many ways that our expectations about what a narrative is can be stretched, reversed, shattered, and then, ultimately, surpassed.

Grades 11 and 12: IB English Literature SL or IB English Literature HL

Literature addresses problems of the human heart, the nexus of human concerns that unite writers across the globe. The two-year IB English course prepares students to discuss, compare, contrast, and write with sensitivity and sophistication about a global variety of literary works and genres. Focusing primarily on the themes of desire, power, and alienation, reading works from different cultures, periods, and styles, students will study the rhetorical strategies and effects that distinguish and connect the works, their themes, and their historical and geographic contexts.

IB English is offered at both Standard Level (SL) and Higher Level (HL). Both courses include the study of drama, poetry, novels, and non-fiction by authors such as Albert Camus, Franz Kafka, Gabriel Garcia-Marquez, Jean Rhys, William Shakespeare, John Keats, George Orwell, James Baldwin, Joan Didion, Chimamanda Adichie, Tennessee Williams, August Wilson, Toni Morrison, Annie Proulx, Henrik Ibsen, Tennessee Williams, and Suzan-Lori Parks.

Both courses emphasize close textual reading, independent work, class discussion, frequent analytical writing, and oral commentary and presentation that hone students' critical thinking skills, including the ability to appreciate diverse points of view, write persuasively, speak articulately, and listen respectfully in order to be more informed, globally aware citizens and leaders. Additionally, students are encouraged to pursue an array of independent enrichment reading from different lenses of literary criticism, field experience (e.g. local lectures, performances, exhibits) and other multidisciplinary approaches (e.g. the rendering of a theme in a work of art) to enhance their appreciation of the artistic and historical distinctiveness of each work. Assessments include quizzes, oral commentaries, presentations, and recitations, journal reflections, written commentaries, and essays, as well as final, externally evaluated IB examinations at the end of 12th grade.

HISTORY

Course Offerings:

9: Western Civilization

10: Intensive Studies

11: IB History of the Americas SL/HL

12: IB 20th Century World History SL/HL

Grade 9: Western Civilization

This course is an exploration of the major political, cultural, philosophical, social, and economic developments of European history that make up what is also called Western Civilization. We begin with an examination of both the Judeo-Christian and Greco-Roman legacies on Western Civilization. The historical narrative begins with the Middle Ages and moves into the 19th Century. Some of the major themes that we focus on throughout the course include the critical tradition (questioning of beliefs and authority), the development of the rule of law, the struggle for representative government, the notion of progress in history, the rise of individualism, the rise of nationalism, negative and positive aspects of technological development, and the temptation of totalitarian ideologies.

Grade 10: Intensive Studies

10th graders take two semester-long 'Intensive Study' courses. Intensive Studies vary in content covered, though they primarily focus on historical developments outside of the United States and in non-Western regions. These classes are narrow in scope and are geared towards developing a depth of knowledge in a specific area.

Students will select Intensive Studies in order of preference. Classes will be created considering student preferences, class size, and having each student learn from two teachers.

Fall Semester

- *Art History, Part I:* Throughout the history of humankind there has been a constant dialogue between the artist, the philosopher, the scientist, and the politician. The role of the artist as both interpreter and creator of culture is indispensable to any society. This course will focus on the interrelation of Western art and Western thought from the ancient world through the Middle Ages as we explore the artistic achievements of Egypt and the Near East, Greece, Rome, and the Early Christian, Byzantine, early Medieval, Romanesque and Gothic eras. We will pay special attention to the influences of the Greek enlightenment, Judaic monotheism, and the Christian world-view on the evolution of culture and art.
- *Latin America:* This course will examine the political, economic and social developments

of Latin America in the second half of the 20th Century. It will provide a general overview of the region post-World War II, concentrating on the last 50 years. A primary aim of the course is to investigate the internal and international obstacles countries experienced modernizing their societies, comparing various nations' attempts to become economically prosperous and politically stable. Personalities (such as Fidel Castro, Salvador Allende, Rafael Trujillo, and Alberto Fujimori) and key events (e.g. the Guatemalan genocide, the Cuban Missile Crisis, the Falklands War, and the Iran-Contra Affair) will be highlighted. The recent rise of the Brazilian, Venezuelan and Bolivian economies will also receive considerable attention.

- *Islamic History from Origins to the Modern Day*: The Islamic faith emerged from the deserts of the Arabian peninsula in the 7th century and spread across the world into Europe, Asia and Africa in an incredibly short period of time. This course will investigate the origin of the religion, beginning with the life of the prophet Mohammad, his revelations in the desert, and his gathering of followers. We will look at the growth of Islam over the next 700 years, from the conquest of Mecca and the fall of the Abbasid Caliphate to the Mongols in 1248. After that, we will study the Mughal Empire, the Ottoman Empire and the emergence of the modern Islamic World. We will culminate with a student-designed unit on recent developments in the Islamic World. This course will focus on the political realities of the Islamic empire; life under the Caliphs; the experiences of minority groups and women; the intellectual achievements of Islamic scholars; and the place of the Islamic Empire as the gateway between Europe and Asia. We will investigate this history through primary sources, selected readings from religious texts, and more recent historical investigations of the period. This course will work to undo stereotypes about Islam and interpret a rich and varied history helping students understand the world we live in today.
- *Genocide in the 20th Century*: The aim of this course is to provide a historical overview of genocide in the 20th century. We will examine what constitutes genocide and what factors could lead one group to exterminate another. The course will begin with an overview of genocide in history. Most of the course will primarily focus on three examples:
 - Guatemala (1954-1989)
 - The Khmer Rouge in Cambodia (1970's)
 - Rwanda (1990's)

Certain basic questions will be used to provide a unifying theme to all of these examples of genocide or, as some have argued, "alleged" genocides: Why were certain groups chosen to be eliminated? What was the role of the government and institutions in creating the genocide? To what extent did the genocide represent the popular will? What historical forces (political, economic, religious, intellectual, social) led to the genocide? How did the victims react to their ordeals? What records do we have from the victims? Is there agreement among scholars about what happened?

Spring Semester

- *Art History, Part II*: This course will explore the art of the modern era from the

Renaissance to the present with an emphasis on humanism and the rise of secularism. Beginning with the Renaissance in Italy and Northern Europe, we will continue on to Baroque, Rococo, and Enlightenment styles. The course will conclude with a look at the 19th and 20th centuries as a time of rapid social change, focusing on such milestones as the Industrial Revolution; the emergence of a middle class; the world wars; communism and the Cold War; the shift in global power; feminism; and multiculturalism.

- *Modern African History*: This course will examine major political, social, cultural and economic developments on the continent of Africa from the end of World War II to the present day. It will begin with an overview of the colonial period and examine Western myths and stereotypes about African society and how Eurocentric biases justified colonial expansion in Africa. After investigating the effects of colonialism on the people of various nations, the course will judge the relative successes of African independence movements, and how centuries of exploitation have affected post-colonial life throughout the continent. Particular attention will be paid to the spate of civil wars and intra-state conflicts in nations such as Rwanda, Sudan, Angola, and Sierra Leone, but also to more optimistic post-colonial events such as the rise of Pan-Africanism, Nelson Mandela's successful quest to end Apartheid in South Africa and that nation's hosting of the World Cup finals in 2010. If time allows, the course will conclude with a study of contemporary issues in Africa (such as HIV/AIDS, access to clean drinking water, and political struggles in Ghana and Zimbabwe) and how these issues are affected by Western foreign policy.
- *Modern Global Economics*: This class is designed to approach the field of economics from an historical perspective. It will start with a history of the major economic ideas that have shaped the systems in which we live, delve into the conflict between communism and capitalism that characterized the 20th century, and culminate in an in-depth study of globalization. Students will consider case studies of nations experiencing rapid economic change and growth, the so-called BRIC nations of Brazil, Russia, India and China. At the domestic level, students will investigate the causes behind the 2008 economic crash. Students will also write individual research projects in order to follow their own areas of interest surrounding economic topics.
- *International Relations*: This course will examine how nations conduct foreign policy. We will focus on the major alliances and governing economic and political realities around the world. Considerable attention will be devoted to the role of the United States, Russia, and China in dealing with some of the conflicts in the world. Some of the topics that will be covered include the following:
 - Conflicts in the Middle East: Iraq, Syria, Iran, Saudi Arabia, Yemen, and Israel
 - Globalization and Global Economic Inequality
 - China's Role Internationally
 - Russia's Role Internationally

An important part of the course will be learning about the structure and function of the United Nations. A major goal of the course will be to get students to learn how to complete research on international social, political and economic issues. This course is ideal for any students interested in joining the school's Model UN chapter.

Grade 11: IB History of the Americas HL

IB History of the Americas (HOTA) takes a subject-based, rather than survey, approach to the study of the United States and its neighbors. It begins with a brief exploration of how America was “conceived in liberty” but also steeped in slavery, a situation historian Edmund Morgan calls the “central paradox” of its founding. The class then focuses on three major topics of study: the causes and effects of the American Civil War and Reconstruction; the development of the Civil Rights, Women’s and Gay Rights Movements; and the origins and legacies of the Cold War. When possible, this course will examine the interplay between events in the US and its neighbors to the South, particularly the US’s efforts to stop the spread of Communism in Latin America. IB History of the Americas (HOTA) is the first half of a two-year sequence.

Grade 12: IB 20th Century World History SL/HL

SL and HL sections are taught together. There is no difference between the courses, with the exception of the final IB exam at the end of 12th grade: HL students are tested on content from both 11th and 12th grades, while SL students are tested on content from 12th grade only.

In this course, students gain an understanding of global history since 1945 and how the major events in Europe affected the rest of the world, and vice versa. A primary aim of this course is breadth and depth in the study of the interplay among political, social, economic, religious, technological, and cultural developments. Considerable attention is also devoted to the rise and fall of the USSR; nationalist and independence movements; decolonization and challenges facing new states; the rise and rule of single-party states, and the state and its relationship with religion and minority groups. 20th Century World History is the second half of the two-year IB History sequence.

MATHEMATICS

Course Offerings:

9: Geometry and Functions

10: Algebra 2 and Trigonometry: *Core or Algebra 2 and Trigonometry: Standard or Algebra 2 and Trigonometry, with Pre-Calculus*

11: Advanced Algebra and Discrete Mathematics or IB Mathematics SL or IB Mathematics HL

12: IB Mathematical Studies SL or IB Mathematics SL or IB Mathematics HL

All grades: Independent Study

Grade 9:

- Geometry and Functions

Pre-algebra or Algebra 1

9th grade math is an exploration of geometry and the concept of functions. The first semester's emphasis is on geometry. Students will study the language, models, and logic of geometry. Students will work with angle theorems, transformations, congruency and similarity, and circle theorems. Vectors and the application of radicals will also be explored during the first semester. Geometry concludes with students writing a paper exploring a topic that is outside the scope of the work done in class. The goal of the first semester is for students to understand geometry as a system with the use of logical reasoning to explain and solve problems, as well as using algebra to assist in solving geometry problems. Second semester is a study of functions. Students will study a wide variety of functions, including linear, quadratic, cubic, exponential, radical, piece-wise, absolute value, and rational functions. Transformations of functions is heavily emphasized. The goal of the second semester is for students to be comfortable working with a wide-range of functions and to become familiar with the parent and generic form of all function types covered in the course.

The expectation for students upon completion of this course is that they will enter either *Advanced Algebra and Trigonometry Standard* or *Honors* based on their experience in 9th grade and after discussion between family and math faculty.

Grade 10

Mathematics, at BFS, emphasizes problem solving and real-life applications to promote the growth of each student's ability to solve both routine and non-routine mathematical problems. Grade 10 students have a choice among three discrete levels of Mathematics ("Core," "Standard," and "Pre-Calc") that vary in scope and depth.

- *Algebra 2 and Trigonometry: Core* The Algebra 2: Core program provides a pace of learning that will help students develop sound fundamentals and confidence in Mathematics. The concentrated scope of the program allows time to begin the year

revisiting key concepts from Algebra 1, if needed. *Students enrolled in Algebra 2 and Trigonometry: Core may choose to take IB Math Studies (Standard Level) in Grade 11.*

- *Algebra 2 and Trigonometry: Standard* The Algebra 2: Standard program is a challenging class aimed at providing students with strong fundamentals in Mathematics. The scope of the course is broad and requires a good understanding of Algebra 1 concepts. *Students enrolled in Algebra 2 and Trigonometry: Standard may choose to take IB Mathematics Standard Level or IB Math Studies Standard Level in Grade 11.*
- *Algebra 2 and Trigonometry, with Pre-Calculus:* The Algebra with Precalculus program is an accelerated mathematics class aimed at students with a demonstrated proficiency in mathematics. The accelerated pace of the program requires students to dedicate significant additional time to understanding key concepts. Mathematical stamina is vital to be successful in this program. *Students enrolled in Algebra 2 and Trigonometry with Pre-Calculus may choose from IB Mathematics Higher Level or IB Mathematics Standard Level in the Grade 11 program.*

Grades 11:

- Advanced Algebra and Discrete Mathematics

Prerequisite: Adv Algebra and Trig or Algebra 1 equivalent

This is a one-year course taken in 11th grade. The course covers Algebra 2 topics including quadratic and exponential functions, and trigonometry including: right triangle trig, non-right triangle trig, trig identities, and circular functions. Additionally, this course emphasizes applied mathematical topics like probability and statistics (one-variable statistics, normal distribution, two-variable statistics including correlation, and the chi-squared test). Other discrete math topics will also be explored. Students will prepare for their IB internal assessment which is a paper written on a topic of the student's choosing for their 12th grade IB Math Studies course.

- IB Mathematics SL, Year 1

Prerequisite: Adv Algebra and Trig Standard or Honors or Algebra 2 equivalent

For most students, Math SL is a two-year course, students explore a wide range of topics to gain both abstract mathematical skill and understanding of the many uses of mathematics in our world. The application of mathematics to real-world problems is a major focus of each unit. Topics include the study of different types of functions, probability, sets and Venn diagrams, statistics, financial mathematics, sequences and series, logic, two and three-dimensional geometry, right and non-right triangle trigonometry, and introductory calculus, learning how to differentiate functions and utilize these derivatives.

- IB Mathematics HL, Year 1

Prerequisites: Adv Algebra and Trig Honors or Algebra 2 equivalent

IB Mathematics HL covers much of the same content as the SL course; please see above for details. The HL course explores those core topics in greater depth, as well as additional topics

such as complex numbers, polynomial functions, and vector products. This course is more abstract and challenging than IB Mathematics SL, and is most appropriate for students with a strong interest in pursuing advanced mathematics at the college level.

Grades 12:

- IB Mathematical Studies SL

Prerequisite: Math SL, Year 1 or Adv Algebra and Discrete Mathematics

Some students will move from Math SL to this course in twelfth grade and will build off of their experiences in 11th grade. It concentrates on mathematics that can be applied to common real-world issues and to topics that relate to science, social studies, daily life, and work. The course is designed to build confidence and encourage an appreciation of mathematics. Students explore a wide range of abstract and applied mathematical topics, and solving real-world problems is a major focus of each unit. Students will be required to independently conduct a research project on a topic of their choosing. Topics include different types of functions (linear, quadratic, rational, trigonometric, and exponential), logic, probability, descriptive and two-variable statistics, financial mathematics, two and three-dimensional geometry, trigonometry, and introductory calculus. Mathematical Studies is offered only at Standard Level (SL).

- IB Mathematics SL, Year 2

Prerequisite: Math SL, Year 1

In this two-year course, students explore a wide range of topics to gain both abstract mathematical skill and understanding of the many uses of mathematics in our world. The application of mathematics to real-world problems is a major focus of each unit. Topics include the study of different types of functions, probability, sets and Venn diagrams, statistics, financial mathematics, sequences and series, logic, two and three-dimensional geometry, right and non-right triangle trigonometry, and introductory calculus, learning how to differentiate functions and utilize these derivatives. Students produce an exploration, focusing on a topic that is of interest to them, that offers them an opportunity to develop independence in their mathematical learning.

- IB Mathematics HL, Year 2

Prerequisites: Math HL, Year 1

IB Mathematics HL covers much of the same content as the SL course; please see above for details. The HL course explores those core topics in greater depth, as well as additional topics such as complex numbers, polynomial functions, and vector products. During this second year, students also choose an area for in-depth study from among four college-level options, such as Discrete Mathematics or Series and Differential Equations. Students produce an exploration, focusing on a topic that is of interest to them, that offers them an opportunity to develop independence in their mathematical learning. This course is more abstract and challenging than IB Mathematics SL, and is most appropriate for students with a strong interest in pursuing advanced mathematics at the college level.

SCIENCE

Course Offerings:

9: Natural Science: Biology

10: Physical Science: Chemistry *or* Chemistry/Physics

11/12: General Biology *or* IB Environmental Systems and Societies SL *or* IB Biology SL *or* IB Biology HL *or* IB Physics SL *or* IB Physics HL

(Students may take double science grades 11 and 12)

Grade 9: Natural Science

- Biology

This course investigates life on the microscopic as well as the macroscopic level. A molecular approach is used to study topics in cell biology, molecular biology, biochemistry (with emphasis on organic chemistry), reproduction, energy in living systems, genetics, transport, respiration and photosynthesis, evolution, and ecology. The course has a required weekly laboratory component in which the emphasis is on quantitative and qualitative analysis of derived data. Students develop a global and interdisciplinary perspective for analysis of biological issues such as emerging diseases and global ecology.

Grade 10: Physical Science

- *Chemistry*: Chemistry investigates the properties of matter and the laws governing chemical reactions. Hands-on experience in the lab and lab reports are central to the course. Frequent inquiry-based lab work emphasizes the importance of discovery and problem solving in science. Students develop key critical thinking skills as they work to solve real world problems and design and refine individual experiments.
- *Chemistry/Physics*: Chemistry/Physics is an accelerated program that is designed for students who are considering IB Physics as a science option for Grade 11. The first semester of the programs focuses on Chemistry, covering material at an accelerated pace. The second semester shifts to Physics. Students choosing this program should be confident mathematicians.

	Chemistry (Full Year)	Chemistry/Physics
Chemistry		
Properties and Structure of Matter	X	X
Scientific Measurements	X	X
Atomic Structure	X	X
Ionic and Covalent Bonding	X	X
Chemical Names and Formulas	X	X
Chemical Reactions	X	X
Stoichiometry	X	
Kinetic Energy and Kinetic Theory	X	
Gas Laws	X	
Physics		
Math, Measurement and Uncertainties		X
Mechanics		X
Thermal Physics: Heat		X
Electricity and Magnetism		X

Grades 11 and 12:

- IB Environmental Systems and Societies SL

The two-year IB Environmental Systems and Societies (ESS) course brings environmental science to life by connecting measurable natural events to the concepts of ecological interaction. It covers ecological systems, people and the environment, energy resources, pollution, and the management of human impacts. Field activities emphasize how environmental science issues presented in the classroom can become part of the wider community and environment. Students complete many “real issue” labs with formal reports and compose various position papers. Environmental activism and international issues are incorporated into

the curriculum. IB ESS is offered at Standard Level (SL).

- **IB Biology SL**

This two-year course is designed to be the equivalent of an introductory-level college biology course, and aims to provide students with the conceptual framework and analytical skills necessary to deal critically with the changing science of biology. The major topics for the SL section include cells, the chemistry of life, genetics, ecology, evolution, anatomy and physiology.

- **IB Biology HL**

Like IB Biology SL, this two-year course is equivalent to an introductory-level college biology course and covers the topics listed above, with the aim of providing students with the conceptual framework and analytical skills necessary to deal critically with the changing science of biology. The HL section meets more frequently than the SL section, and studies additional topics including nucleic acids, proteins, cellular respiration, photosynthesis, population genetics, human reproduction, human evolution, infectious diseases, muscles and movement, neurobiology, and plant science.

- **IB Physics SL**

The two-year IB Physics course is designed to further students' understanding of the physical world and advance their problem-solving strategies. Our aim is to develop in each student a "need to know" that will lead to the questioning and ultimately the understanding of the 'whys' and 'hows' of phenomena. Students learn how the world was examined and described by the early philosophers and refine that understanding as we progress from the Macroworld to the Microworld, from observable experiments to thought experiments, from the mechanics of motion to the study of electromagnetism to an introduction to relativity and contemporary physics. IB Physics is offered only at Standard Level (SL).

WORLD LANGUAGES

Course Offerings:

All 9th and 10th grade students must take French or Spanish as their primary language.

9: Spanish/French 1 or Spanish/French 2

10: Spanish/French 2 or Spanish/French 3

If they wish, 9th and 10th grade students may ALSO take a 'secondary' language (Latin or Mandarin) as an elective in addition to Spanish or French. Course offerings in Mandarin vary from year to year depending on student interest, scheduling constraints, and faculty availability. We make every effort to place students in the appropriate level, although this may sometimes be an After 3 at Willoughby (after school) course.

9: Latin 1 or Latin 2 or Mandarin

10: Latin 2 or Latin 3 or Mandarin

In addition to studying French or Spanish as their primary language, students with native or near-native proficiency in French or Spanish can also study this language as an elective course in the 9th and 10th grade.

In 11th grade, students may continue into IB courses in Spanish, French or Latin, or may choose to study Mandarin Chinese if they have successfully completed the prerequisite courses Mandarin 1 and 2 or the equivalent.

11/12: IB Spanish/French Ab Initio SL or IB Spanish/French/Latin B SL/HL
or IB Mandarin Ab Initio SL

Grades 9 and 10:

- French 1

No prerequisites; for students with little or no exposure to the language.

French 1 is an introductory course; focus is first on vocabulary and conversation and proceeds to grammar and structure. In addition to developing the four language skills (reading, writing, listening, and speaking), students learn about the culture and traditions of the French-speaking world. In addition to the textbook, students use the Internet and beginning level readers to enrich their exposure to the language. The course is conducted almost entirely in French, and students are expected to communicate in French more and more as the year progresses. Assessments are varied and include oral and written presentations as well as listening and reading comprehension exercises.

- French 2

Prerequisites: French 1 or placement exam

This course builds on the skills students developed in French 1. Activities focus on broadening communication skills and practicing them in meaningful and realistic situations. The study of the cultures of French-speaking places is continued through reading selections, conversations, short stories, narratives, and discussions. In addition to the text and workbooks, film, videos, the

Internet, and music are used to enrich students' exposure to the language. The course is conducted entirely in French, and students are expected to communicate in French more and more as the year progresses.

- French 3

Prerequisites: French 2 or placement exam

This course continues to provide a balanced focus on speaking, listening, reading and writing skills. The introduction of new themes, grammatical concepts and vocabulary is built upon the solid foundation of previous years' study. In addition to the text and workbooks, students work with authentic reading selections, film, music, and the Internet to enhance their study of the language and cultures of the French-speaking world. The course is conducted entirely in French.

- Spanish 1

No prerequisites; for students with little or no exposure to the language.

Spanish 1 is an introductory course; focus is first on vocabulary and conversation and proceeds to grammar and structure. In addition to developing the four language skills (reading, writing, listening, and speaking), students learn about the culture and traditions of the Spanish-speaking world. In addition to the textbook, students use the Internet and beginning level readers to enrich their exposure to the language. The course is conducted entirely in Spanish, and students are expected to communicate in Spanish more and more as the year progresses. Assessments are varied and include oral and written presentations as well as listening and reading comprehension exercises.

- Spanish 2

Prerequisites: Spanish 1 or placement exam

This course builds on the skills students developed in Spanish 1. New material includes the further use of tenses, noun-verb and noun-adjective agreement, object pronouns, etc. Activities focus on broadening communication skills and practicing them in meaningful and realistic situations. The study of the cultures of Spanish-speaking places is continued through reading selections, conversations, short stories, narratives, and discussions. In addition to the text and workbooks, students read different types of texts from magazines and newspapers published in Spanish speaking countries. The course is conducted entirely in Spanish, and students are expected to communicate in Spanish.

- Spanish 3

Prerequisites: Spanish 2 or placement exam

With a continuation of an audio-lingual and visual approach, this course builds on the grammatical and syntactical skills that students have learned in previous years. One of the goals is to begin to develop fluid and grammatically correct conversation. In addition to the text and workbooks, students read selections by noted Latino and Hispanic authors, discuss newspaper and magazine articles, and read stories and legends from the various Latin American countries. The course is conducted entirely in Spanish.

ELECTIVE SECOND WORLD LANGUAGE COURSES

- Latin 1

No prerequisites; for students with little or no exposure to the language.

Latin 1 is an introduction to Latin language and letters and their influence, Roman culture, and the arts of the spoken and written word in prose and verse. From the very first class, introduction to vocabulary and grammar is accompanied by readings of sentences and short paragraphs from Roman authors. Students gain a sense of the main outlines of Roman literary history and how it impacted the subsequent development of European language, thought and culture, a development that extends to our own times. Students sit for the National Latin Exam in the spring.

- Latin 2

Prerequisites: Latin 1 or placement exam

In Latin 2, students read well into the 3rd unit of the Cambridge Latin Course (Stages 21-29) and begin to read continuous passages of adapted and unadapted Latin prose and poetry of increasing complexity. Students also take into account the historical, social and cultural contexts of Latin literature. The use of online resources offers further resources for exploring Roman culture and the Latin language. Students sit for the National Latin Exam in the spring.

- Latin 3

Prerequisites: Latin 2 or placement exam

Latin 3 is the embarkation point for advanced Latin language and literature studies. Students complete the 3rd unit of the Cambridge Latin Course and read selected stages of Unit 4, which introduces them to continuous passages of unadapted Latin prose and poetry, many of which (Vergil, Ovid, Catullus, Cicero) are also included in the IB curriculum. Students complete their study of all the main forms and constructions of the Latin language and extend their vocabulary to 1500-2000 words. Students are also introduced to many rhetorical/stylistic figures and basic elements of prosody. Students sit for the National Latin Exam in the spring.

- Mandarin 1

No prerequisites; for students with little or no exposure to the language.

In introductory Mandarin courses, students are introduced to the phonetic tones and pronunciation rules of spoken Chinese and become familiar with the Pinyin Romanization system. Emphasis is placed on early mastery of tonal accuracy through visualization and interactive classroom exercises. Within the first weeks of class students begin the study of Chinese characters as well, with side-by-side presentation of traditional and simplified versions for future fluency across the full range of Chinese cultural areas. To enliven the study of characters, the origins of the writing system and the art of Chinese calligraphy will be introduced. Using an age-appropriate text and workbook series, students progress quickly into basic skills such as counting, greetings, and the use of simple grammatical structures in conversation and presentation as they develop basic competency across all four language skills

(reading, writing, listening, and speaking). As the courses progress, instruction switches predominantly to Chinese and students are expected to speak Chinese as much as possible in the classroom. The Mandarin program is designed to build confidence through fun, real-life situational use and to provide familiarity with day-to-day Chinese cultural customs and traditions.

- Mandarin 2

For students who have completed Mandarin 1 or have some knowledge about the language. Mandarin Chinese, Level 2 begins with a review of material covered in Mandarin 1. The foundation of tonal pronunciation built in Mandarin 1 is reinforced through drilling and practice while students progress into the acquisition of new vocabulary and grammar, including a continuation of their study of Chinese characters. Thematic lessons in an age-appropriate text and workbook series provide incremental introduction of new words, sentence building blocks, key structures, conversational models, and spoken presentations. Lessons are organized around topics including animals, birthdays and calendars, speaking and studying Chinese, and food and drink in China. All four language skills (reading, writing, listening, and speaking) continue to be emphasized, with a gradual shift from reading and writing with the Pinyin Romanization system to reading and writing with Chinese characters. Like Mandarin 1, the course is designed to continue to build confidence through real-life situational use and to provide familiarity with day-to-day Chinese cultural customs and traditions.

Grades 11 and 12:

- IB French Ab Initio SL

Prerequisites: French 2 or placement exam

Ab Initio French is an intensive two-year IB language program designed for students in the 11th and 12th grades. The course is organized into three themes: the individual and society; leisure time and work; and the urban and rural environments. These themes comprise topics that provide students with many opportunities to practice and explore the language and to develop intercultural understanding. Through the development of reading, writing, listening and speaking skills, students learn to respond and interact appropriately in a wide range of everyday, authentic situations. Assessments vary and include projects, unit tests and quizzes, and, at the end of the two years, both internally and externally moderated IB exams. IB Ab Initio language courses are offered only at Standard Level (SL).

- IB French B SL/HL

Prerequisites: French 3 or placement exam

This two-year course is conducted entirely in French and emphasizes language acquisition and intercultural understanding. Students explore the culture, history, traditions, current affairs and the inner world of French-speaking countries using a thematic approach focusing on Social

Relations, Communication & Media, Global Issues, Health, Leisure, Cultural Diversity, and Science & Technology. In addition to these thematic units, students registered for the class at Higher Level (HL) meet for additional class time and read several literary works in French. Serving as a complement to our class text, "Le monde en français," students will also study these themes by way of authentic written and oral texts (i.e. newspaper and magazine articles, video, radio programs and song) selected from a wide range of francophone countries. Assessments vary and include projects, oral and written presentations, unit tests and quizzes, and, at the end of the two years, both internally and externally moderated IB exams.

- IB Spanish Ab Initio SL

Prerequisites: Spanish 2 or placement exam

IB Spanish Ab Initio is a two-year course intended for students who have completed Spanish 2. The course is organized into three themes: the individual and society; leisure time and work; and the urban and rural environments. These themes comprise topics that provide students with many opportunities to practice and explore the language and to develop intercultural understanding. Through the development of reading, writing, listening and speaking skills, students learn to interact appropriately in a wide range of everyday, authentic situations. Assessments vary and include projects, oral and written presentations, unit tests and quizzes, and, at the end of the two years, both internally and externally moderated IB exams. IB Ab Initio language courses are offered only at Standard Level (SL).

- IB Spanish B SL/HL

Prerequisites: Spanish 3 or placement exam

This two-year course is conducted entirely in Spanish and emphasizes language acquisition and intercultural understanding. Students explore the culture, history, traditions, current affairs and the inner world of Spanish-speaking countries using a thematic approach focusing on: Communication and Media, Global Issues, Social Relations, and Health and Leisure. In addition to these thematic units, students registered for the class at Higher Level (HL) meet for additional class time and read several literary works in Spanish. To the extent possible, the teaching of language structures, idiomatic expressions, vocabulary, and grammar takes place in the context of other activities, for example oral activities or the reading of texts. Students can expect to learn from authentic written texts and oral prompts, such as video and song, selected from a wide range of Spanish-speaking countries. Assessments vary and include projects, oral and written presentations, unit tests and quizzes, and, at the end of the two years, both internally and externally moderated IB exams.

- IB Latin B SL/HL

Prerequisites: Latin 3 or placement exam

This two-year intensive language course introduces students to the languages, literatures and culture of ancient Rome through a close reading of selected works of Late Republican, Augustan "Golden" and early Imperial "Silver" writers. The syllabus may include selections from Ovid's *Metamorphoses*, Catullan elegy and polymetrics, Latin lyric and elegiac poetry, Vergil's *Aeneid* (epic), and Cicero (speeches). Students take note of stylistic, poetic and rhetorical nuances, in addition to grammatical and syntactical points. They are also expected to consider these texts within their historical, political

and cultural contexts. At the end of the second year students sit for two exams (an Ovid or Cicero sight translation and a syllabus-based literature exam) and submit a research dossier. Students registered for the class at Higher Level (HL) meet for additional class time and read more works.

- IB Mandarin Ab Initio SL

Prerequisite: Mandarin 1 and 2, or departmental permission

IB Mandarin Ab Initio is a two-year introductory course intended for students who have completed Mandarin 1 and 2. The course is organized into three themes: the individual and society; leisure time and work; and the urban and rural environments. These themes provide students with many opportunities to practice and explore the language and to develop intercultural understanding. Through the development of reading, writing, listening and speaking skills, students learn to interact appropriately in a wide range of everyday, authentic situations. Assessments vary and include projects, tests and quizzes. IB Ab Initio language courses are offered only at Standard Level (SL).

THE ARTS

Course Offerings:

Students in grades 9 and 10 choose ONE arts course each year.

9: Visual or Performing Arts elective

10: Visual or Performing Arts elective

Students who opt for a Visual Arts course in 9th grade must take a Performing Arts course in 10th grade, and vice versa. (Exceptions may be made by the departments on a case-by-case basis.)

One year of Visual or Performing Arts in 11th or 12th grade is required for graduation.

11/12: IB Visual Art SL/HL or IB Theatre SL/HL or IB Music SL/HL or IB Dance SL/HL

or

11: Visual or Performing Arts elective

12: Visual or Performing Arts elective

Grades 9 and 10:

VISUAL ARTS

- Arts Workshop: 2-D

This introductory art course covers a variety of projects in different media. Students have the opportunity to gain skill and confidence in expressing themselves with different art materials. Students practice drawing and painting from observation as well as translate their individual visual concepts and imagery with printmaking and collage. Flexibly structured lessons allow students to work in their own zone of development. Students look at the works and techniques of different artists to discuss the content of their imagery for motivation and inspiration. Students learn about key elements in effective design, composition and color interaction. Students keep an art journal with regularly assigned homework.

- Arts Workshop: 3-D

In this introductory course, students work on short and long-term projects as they explore the possibilities of creating in three dimensions. Attention is given to problem-solving, learning techniques and making aesthetic decisions. Projects may include relief sculptures as well as “in the round” pieces. Styles and focus range from abstract planes in space, assemblage, and realistic rendering in clay. Influences include modern and contemporary sculptors as well as objects from many traditions and cultures. Students are expected to keep sketchbooks. Students explore the history and philosophy of art through homework and class discussion related to classroom projects.

- Introduction to Ceramics

This course takes students through the wheel throwing and glaze making process and allows the students to appreciate and understand the technical and creative skills necessary to learn the potter's wheel. Discussions on the history of ceramics and its role in societies and the Asian influences on our Western culture are part of the curriculum. By the end of the year, each student is expected to complete a dinnerware set in a glaze (color) of his/her own choosing.

- **Darkroom Photography**

This course is an exploration into traditional fine art photography, and takes the student through two distinct levels of learning: technical proficiency and creativity. Each area of study is dependent on the other for the development of a successful photographer. The first semester is devoted to mastering a wide range of technical information: the theory and use of a camera; control of the light gathering process; knowledge of light-sensitive materials such as films and papers; the proper and safe use of various chemicals and their effects in the photographic process; proper procedures and habits of working in the darkroom. Once a sufficient amount of technical expertise is obtained, the creative process of photography begins. This part of the course entails using the technical knowledge to visually manipulate the world in a personal way that can tell a story or convey a feeling. Varied photography subjects and projects are to be completed in gallery form. These projects are designed to both stimulate and challenge the subjective visions of each student and advance a specific technical procedure.

- **Printmaking and Alternative Processes**

In this course, students are introduced to modes of art making outside of the traditional drawing/painting cannon. Lessons include and explore a variety of printmaking techniques, collage, artists' books, assemblage and digital technology. Additionally, students learn about artists and artistic movements that incorporated these methods such as Surrealism, Dada, Pop Art, Mail Art, Postmodernism, Street Art, and other elements of visual culture.

- **Mixed Media**

Mixed Media is intended for students interested in working in a variety of mediums such as sculpture, printmaking, drawing, painting, stop motion animation and video. Each medium is introduced and explored so students are comfortable using and possibly merging them to create works that show their artistic intentions. Students will review and discuss the art of a variety of artists (both historical and contemporary) that emphasize similar themes and mediums. Students also learn artistic techniques and principles, and work independently and collaboratively to reflect upon their own and their peers' projects.

Grades 11 and 12:

- **IB Visual Arts SL/HL**

The focus of this two-year course is to develop a serious body of work that is individually meaningful. Students integrate the techniques and processes of art, the visual elements and the principles of design, and the continued acquisition of knowledge of artists and art movements as they work on evolving connections and themes in their own art. Students

explore and study the art of other cultures and follow threads that bring out the similarities and differences in the art of other traditions. Class time includes work in a variety of media and forms including drawing and painting, printmaking, sculpture, and installation. Various techniques and approaches to working are introduced or reviewed. Students attend museums and galleries independently. Students keep a Journal, which is a continuing, essential means to initiate ideas, research, reflect, expand knowledge, discover and acknowledge connections, both visually and verbally. Assessment for the course includes an academic Comparative Study of three works of art, a Process Portfolio as well as an installed public exhibition of each student's work.

- Concepts in Clay

This ceramics course covers a variety of ceramic skills, taking students through the wheel throwing and glaze making process. Discussions of the history of ceramics, its role in societies, and the Asian influences on Western culture are part of the curriculum. In addition to the creation of sculptural pieces, one of the goals for this course is to allow the students to appreciate and understand the technical and creative skills necessary to learn the potter's wheel. Another goal is for the class to learn the Japanese method of "throwing off the hump," and to make altered pots.

- Advanced Digital Photography

Advanced Digital Photography students are challenged with an immersion in the world of digital capture photography. The use of computer technology and the intense exploration and use of Adobe Photoshop for image enhancement and manipulation are designed to push students' creative limits. The course seeks to combine technical skills with artistic appreciation and gives students the opportunity to demonstrate their creativity by using modern digital technology to achieve what cannot be done in the traditional darkroom environment. Basic digital skills such as file management, resolutions, cropping, resizing, and selections are quickly mastered; the more advanced areas of study include color theory, color correction, printer color management, masks, layers, channels, retouching, montage, gradients, clipping paths, and more. Student work is channeled towards a final project incorporating elements of text, photographs, and other images.

PERFORMING ARTS

Grades 9 and 10

- Theatre 1

In this course students develop an understanding of the theatre by investigating and experiencing the roles of actor, director, designer, playwright and dramaturg. Students participate in vocal and physical exercises, scene work and play analysis. Students are required to read and discuss texts, conduct research, memorize scenes, create original pieces and reflect on their theatre experiences through writing and group discussion. This course exposes students to multiple world theatre traditions.

- Chamber Ensemble 1

By audition and/or departmental approval

This course is open to experienced string, wind and piano instrumentalists. The Chamber Ensemble studies and performs repertoire from a broad range of musical styles. Students also learn sight reading, dictation, music history, theory and composition. Participants must maintain a consistent practice schedule of at least 45 minutes per day. The Chamber Ensemble performs in the Winter and Spring Orchestra Concerts.

- Chorus 1

This course in ensemble vocal performance is open to singers of all levels. Students rehearse choral repertoire from a variety of musical genres and styles, such as jazz, pop/rock, musical theatre, American and international folk music, and classical music. Curriculum includes vocal and choral technique, music literacy and theory, sight-singing and ear-training. There are ample opportunities for solo singing, but it is not required. The ensemble performs in a variety of settings, including the Winter and Spring Chorus Concerts and the Upper School Music Concert.

- Jazz Band 1

By audition and/or departmental approval

This course is open to brass, woodwind and rhythm section (bass, drums or piano) instrumentalists with an interest in exploring jazz styles. Students learn jazz repertoire in addition to experimenting with group improvisation, composition, and arranging. The curriculum includes music theory, ensemble awareness, ear training, and general instrumental fluency. Participants must have experience on their instrument and maintain a regular practice schedule of at least 40 minutes daily, but familiarity with jazz is not required. Students are challenged to expand their listening horizons, broaden their technique, and use their full intellectual and musical capacity in improvisation. The Jazz Band performs in a variety of settings throughout the year, and in the Winter and Spring Jazz Concerts.

- Dance 1

Please note: All students who plan to choreograph for the Dance Concert must register for either Dance 1, IB Dance or PE Dance. In Dance 1, students develop self-expression and empowerment through dance in three aspects: dancers/performers, choreographers/creators, and theorists/historians. As dancers/performers, they study a variety of dance techniques: Modern and post-modern techniques including Dunham, Bartenieff, Horton, Cunningham, Improvisation, and African Diasporic forms. They also work with a guest artist and perform in the Dance Concert. As choreographers/creators, they develop skills in improvisation, and explore the relationship between dance, music, site, and media, creating group works, a solo and a dance video. As dance theorists/historians, they learn the cultural and historical contexts of the techniques they study and the choreographic approaches we use, and develop vocabulary for providing strong artistic feedback to each other. We also attend two dance performances at theaters in New York City.

Grades 11 and 12

- IB Theatre SL/HL (two years)
- Theatre 2 (one year)

Students who wish to take a one-year theatre elective in 11th or 12th grade may register for Theatre 2, which meets in the same section as the first year of IB Theatre.

IB Theatre students investigate the histories and texts of various theatrical traditions from around the world and strive to understand the historical and cultural contexts that produced these traditions. Students also engage the writings and practices of theatre theorists, delving into the question of why we make theatre. In class, students experience the theater through the roles of actor, director, dramaturge, designer, and spectator. Students will devise new work and stage written play texts individually and in small groups. Throughout the course, students reflect on their own work and the work of their peers in writing.

- IB Dance SL/HL (two years)
- Dance 2 (one year)

Students who wish to take a one-year dance elective in 11th or 12th grade may register for Dance 2, which meets in the same section as the first year of IB Dance.

Please note: All students who plan to choreograph for the Dance Concert must register for either Dance 2, IB Dance or PE Dance.

In IB Dance, students build upon their foundation in a variety of dance techniques by studying Yoga, Limón Modern, Haitian, Cuban Folkloric and West African. They also develop their skills in partnering through contact improvisation, and learn choreography from a guest artist for the Dance Concert. Students define their own artistic voices, aesthetic preferences, leadership and decision-making skills, gaining expertise in choreographic structure, craft and the use of compositional elements. After choreographing solos on themselves, the dancers then create solos or duets for each other, learning how to direct other dancers. Through reflection and discussion, they develop sophisticated means for analyzing dance as they complete an in-depth exploration and comparison of two dance styles: one familiar and one unfamiliar to them. The class also attends three dance performances in New York City.

- IB Music SL/HL (two years)

IB Music is open to students with a performance focus in Chorus, Chamber Ensemble or Jazz Band. Prerequisite: audition and/or departmental approval.

IB Music SL is comprised of two equally weighted components: musical performance and musical perception. All IB music students rehearse and perform with one of the ensemble music classes: Chorus 2, Jazz Band 2, or Chamber Ensemble 2 (see descriptions below). In addition, they attend weekly classes devoted to musical perception skills. Students learn to identify key elements and structures of music by ear and from a score, and to describe what they hear using musical terminology; the study of music theory provides additional tools for musical analysis. Musical content includes Western art music, traditional music from around the world, popular music and jazz. Instrumental students are expected to take private lessons and to maintain a

regular practice schedule of at least 45 minutes daily. IB Music HL students must learn and perform solo repertoire (vocal or instrumental) in addition to performing with the ensemble; they also undertake projects in musical composition and/or arranging. IB Music students perform in a variety of settings throughout the year, and in the Winter and Spring Chorus, Jazz, or Orchestra Concerts.

- Jazz Band 2

This course includes both non-IB and IB Music Jazz students. (IB students register for IB Music.) Prerequisite: audition and/or departmental approval.

This course is open to brass, woodwind and rhythm section (bass, drums or piano) instrumentalists with an interest in exploring jazz styles. Students learn jazz repertoire in addition to experimenting with group improvisation, composition, and arranging. Throughout the curriculum, we will explore music theory, ensemble awareness, ear training, and instrumental fluency. Participants must have experience on their instrument and maintain a regular practice schedule of at least 45 minutes daily, but experience with jazz is not required. Repertoire and pace of learning will be more challenging than in Jazz Band 1, and students are encouraged to take private lessons or extra coaching to help them learn the demanding material. Students will be challenged to expand their listening horizons, broaden their technique, and use their full intellectual and musical capacity in improvisation. Students will have research and listening assignments on significant topics in jazz, culminating in oral and written presentations. The Jazz Band performs in a variety of settings throughout the year, and in the Winter and Spring Jazz Concerts.

- Chamber Ensemble 2

This course includes both non-IB and IB Music Chamber Ensemble students. (IB students register for IB Music.) Prerequisite: audition and/or departmental approval.

This course is open to experienced string, wind and piano instrumentalists. The Chamber Ensemble studies and performs repertoire from a broad range of musical styles. Repertoire is more advanced than for Chamber Ensemble 1. Students learn music history and theory and complete research and listening assignments. Participants must be proficient on their instrument, maintain a consistent practice schedule of at least 45 minutes per day, and take private lessons. The Chamber Ensemble performs in the Winter and Spring Orchestra Concerts.

- Chorus 2

This course includes both non-IB and IB Music Chorus students. (IB students register for IB Music.)

This course in ensemble vocal performance is open to singers of all levels. Students rehearse choral repertoire from a variety of musical genres and styles, such as jazz, pop/rock, musical theatre, American and international folk music, and classical music. Curriculum includes vocal and choral technique, music literacy and theory, sight-singing and ear-training. In addition, the ensemble performs in a variety of settings, including the Winter and Spring Chorus Concerts and the Upper School Music Concert.

SEMINAR COURSES

Course Offerings:

9: Design & Technology, Health, Quakerism Study Skills, Service & Justice I: Understanding Identity, Power, & Privilege

10: Computer Programming, World Religions, Health, Service & Justice II: Raising Awareness & Inspiring Action

Grade 9:

Design & Technology

In this required seminar course, all 9th grade students explore and practice applications of technology in their everyday lives as scholars, designers, and stewards. Students develop fluency in information technology, media production, and algorithmic thinking. By making use of the iterative design process, students build a portfolio of technology based design work such as data visualization, games, and 3D models. Discussions about design and technology within historical and social contexts provide additional considerations for students to be responsible and innovative technologists in the Upper School.

Health

This required one-semester course covers the following topics: sex and sexuality, intimate relationships and friendships, communication, relationships with parents, conflict resolution, drugs and drug use, stress management, and the media. Class is discussion-based, with students facilitating many classes to foster communication skills between peers. The course is co-taught by two members of the Health Department and meets twice a week, with some classes separated by gender, depending on student choice.

Quakerism

This course offers a brief introduction to Quaker traditions, social values, approaches to decision making, and other practices. Its goals are to help students gain a familiarity with Quaker history and its relation to Quaker faith and practice today, to provide students with an understanding of the context of the Quaker education they are receiving while providing them information necessary for a critical evaluation of that context, and to promote a school-wide sense of community that reflects the school's Quaker heritage. The second half of this course focuses on the Quaker concept of "witness." Enabling students to reflectively examine social and ethical issues and the moral and spiritual dimensions in their own lives is a central element of this course. Students develop an outline for a social action project on a topic of their choosing.

Study Skills

This required semester long course is designed to support students in their transition to high school. It focuses on study skills and technology strategies to promote success in all content areas. In the first quarter students review concepts such as learning styles, information

processing theory, note taking, test taking, vocabulary development, textbook study, and researching. Students analyze their own study habits, with the goal of improving their efficiency as learners.

Service & Justice I: Understanding Identity, Power, & Privilege

This student-centered, collaborative course provides a foundation for students' service experiences in 10th-12th grades, introducing key elements of service learning for social justice and developing students' skills. The course begins with a focus on identity, specifically how a deeper understanding of ourselves draws us to the issues we choose to address and enables us to partner effectively to make change. Students will explore the intersectionality of race, class, gender, sexual orientation, ability, age, religion, and nationality. They will investigate multiple perspectives, examine root causes, appreciate differences, understand power dynamics, and connect systemic issues to their lives.

This course will culminate in the 9th Grade End-of-Year Service Learning & Civic Engagement Experience: Taking Action in Brooklyn. Students will be based in Brooklyn and focused on service learning and civic engagement in various communities in our borough. Students will learn more context about the history of activism in Brooklyn and engage with community partners doing meaningful work on a range of issues. Small groups will be created based on the preferences students indicate for particular organizations and cultural experiences.

Grade 10

Computer Programming

In this year long elective course, students study, apply and experiment with fundamental principles of computer programming. Students will design, write, and debug computer programs using concepts such as control structures, iterative structures and functions. Students will also explore contexts around computer science including the evolution of the field, issues around equity and the influence of science fiction. No prior programming experience is required.

Service & Justice II: Raising Awareness & Inspiring Action

Building on their learnings from *Service and Justice I*, students will take leadership in identifying a range of social justice issues and selecting areas of focus. They will prepare, organize, and lead our Upper School Community Issues Conference in November. The goal for the conference will be for students to learn about significant local community issues, to participate in collaborative problem solving, and to identify ways they, as young people, can support constructive change in the community. As the organizers and leaders of the Community Issues Conference, students in *Service & Justice II* will identify authentic community needs and

research community partners. They will select a range of issues to explore, meet with representatives from local organizations, and discuss ways they can support these organizations to address the underlying causes of the issues they face. The day will generate interest, curiosity, understanding and an incentive to become involved and take action! During their debrief and follow-up of the Community Issues Conference, students will read excerpts from a range of texts including *Toxic Charity: How Churches and Charities Hurt Those They Help, And How to Reverse It* by Robert Lupton. They will explore the differences between charity and solidarity, and learn more about a social justice approach to service learning that is rooted in an understanding of power and privilege. Ultimately, students will build on their experiences in this course to plan and implement their personal Creativity Activity and Service (C.A.S.) programs for the 11th and 12th grade years, taking action to address community needs.

INTERNATIONAL BACCALAUREATE

Course Offerings:

11 & 12: Theory of Knowledge, Creativity.Action.Service

Creativity, Activity, Service (CAS)

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IB Theory of Knowledge

Required for students enrolled in the IB Diploma Program

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aim to help students discover and express their views on knowledge issues, and encourage them to share ideas with others and to listen to and learn from what others think. In this process, students' thinking and their understanding of knowledge as a human construction are shaped, enriched, and deepened. Connections are made among different IB subjects, CAS experience, and Extended Essay research. Assessments include a 1,600 word essay and a formally evaluated oral presentation involving a "real life" example of the knowledge issues explored in the course.

COLLEGE COUNSELING

Course Offerings:

11: Junior Seminar

12: Senior Seminar

Grade 11: Junior Seminar

Junior Seminar is a non-graded but required course that meets weekly during the spring semester of 11th grade. In small groups of five to eight students, students learn about the variety of educational options available to them after graduation, from small colleges to large universities, from liberal arts programs to schools of fine arts and engineering, and everything in between. They reflect on their aptitudes, interests, and dreams, and begin to research and plan visits to colleges and universities that they may wish to attend, with the goal of compiling a thoughtful, appropriate preliminary college list by May. Students also learn about the application process: what information, test scores, and materials are required, how to assemble applications that highlight their strengths, and how college admissions offices evaluate applications. Students visit colleges on their own and on school-organized trips, and attend a major college fair. Students begin drafting a personal essay that can be used as part of their college applications, and request recommendation letters from teachers. The goal of the Junior Seminar is that students be knowledgeable about their options, and enter 12th grade prepared to apply to colleges where they can be happy and successful.

Grade 12: Senior Seminar

Senior Seminar meets once a week during the fall semester of 12th grade, picking up where Junior Seminar left off. Students meet in small groups with their college counselor, to ask questions, discuss the progress of their college search and application process, learn about financial aid and scholarship options, and share information with their classmates. Some sessions are devoted to individual meetings between the students and their counselor; in these meetings, application lists are honed, essays and other application components are reviewed and edited, and the students are kept on a steady course. Students also use the time reserved for Senior Seminar to use the resources available in the College Counseling Office to research colleges and to work on the various parts of their applications. By the end of December,

students will have put together compelling applications that capture their strengths and accomplishments, and will have the knowledge and information necessary to make good choices about their educational futures.

PHYSICAL EDUCATION

PHYSICAL EDUCATION PATHWAYS

Course Offerings: Grades 9-12

11th & 12th Grade students can earn exemption from PE class for the season when participating on an athletic team.

The Physical Education (PE) curriculum enables students to enjoy and succeed in many kinds of physical activity. After choosing a pathway to follow for the academic year, they develop a wide range of skills and the ability to use tactics, strategies and compositional ideas to perform successfully. They think about what they are doing, analyze the situation, and make decisions. They also reflect on their own and others' performances and find ways to improve. As a result, they develop the confidence to take part in different physical activities and learn about the value of healthy, active lifestyles. Discovering what they like to do, what their aptitudes are, and how and where to get involved in physical activity helps them make informed choices about lifelong physical activity. Competence, performance, creativity, and healthy, active lifestyles are key concepts that underpin the study of PE. The goal is for students to be able to move effectively in a range of activities, empowered with the knowledge, skills and understanding to be able to enjoy health-promoting physical activities. The PE Department strives to allow each student to nurture the athlete within, not only for a high school career, but for a lifetime.

The concept of "pathways", not "electives", originated from electives appearing like a patchwork quilt of activities with no real consistent link. In our PE Pathways program a student enters in 9th grade and for their upper school academic years will be guided through a pathway in:

- General PE & Advanced General PE

General PE introduces a wide spectrum of sports, games and activities. Each activity is categorized into one of four areas of content: Outwitting Opponents: This includes activities in which the concept of success is to overcome an opponent or opponents in a face-to-face competition. For example: Invasion games (eg basketball, soccer, netball, rugby, American football, lacrosse, ultimate frisbee and hockey) Net/wall games (eg volleyball, badminton, tennis, and table tennis), Striking/fielding games (eg softball, baseball, and cricket). Accurate Replication: This includes activities in which success is judged on the ability to repeat actions, phrases and sequences of movement as perfectly as possible. Examples include: gymnastics and skateboarding. Performing at Maximum: This includes activities in which success is measured by personal best scores or times, and in competition by direct comparison with others scores or times. Examples include racing in a track event or on a skateboard, or having a low score in golf or a high score in archery. Identifying & Solving Problems: This includes activities

in which success is judged on how collaboratively, efficiently and safely challenges are overcome. Eg. orienteering.

- Yoga

In yoga class, the students learn the postures of hatha and vinyasa yoga. We begin with Suriya Namaskar A and B and slowly learn to embody a variety of standing and seated postures including: triangle, extended side angle and warrior poses. As students gain more body awareness, strength and endurance, we learn to perform more advanced postures and become accustomed to the Sanskrit names for these poses. We express this wide variety of postures through themed classes such as chest opening, hip opening, back bending, inversions, arm balancing and forward folding. In addition to the cardiovascular stimulation, each class explores a message and focus meant to teach the arts of concentration, introspection and self reflection.

- Swimming

Swimming lessons are held at St. Francis College's competition-sized pool. Students develop and refine their stroke and breathing techniques to increase stamina and speed in all four strokes. In addition, students will practice starts and turns, individual medleys and focus on creating a personalized practice regime with appropriate terminology. This class is not suitable for students that have difficulty swimming.

- Climbing

Held at Everyday Athlete, this pathway teaches students how to be better climbers. Students build confidence and skills in a progressive and systematic way by learning a solid foundation of basic climbing techniques and movements, including but limited to: climbing movements, balance and mobility, injury prevention, conditioning, core training, and strength training. In addition, students learn basic rope techniques including knots, and are taught belaying and other techniques used in climbing.

- Functional Fitness

In this course, students learn and apply various training methods and principles to a Personal Exercise Program (PEP) using the new BFS Fitness Center. The development of the PEP underpins the study of weight training in PE. The PEP is a series of exercises put together for each individual student. The exercise sessions follow all the guidelines for the principles of training to make them safe and suitable for the performer. Students also explore skill-related fitness and the components that define 'fitness'. The PEP will be performed regularly and modified when the activities become too easy to have an effect on the performer. The PEP is submitted as coursework.

- Cycling (Fall & Spring Only)

The cycling curriculum introduces the competitive "sport of bicycling"; bicycle traffic safety; project work encouraging bicycling to school; create and track cycle routes in the neighborhood and understanding the environmental benefits of cycling. Students will also learn and maintain physical fitness strategies by improving health and performance including basic knowledge of

psychological and sociological concepts, bicycle motor skills, principles and strategies applied to competition will also be covered. Owning your own bicycle and being comfortable cycling is preferable.

- Volleyball with Felix (Winter Only)

Offered by Girls & Boys Varsity Volleyball coach Felix Alberto, students will participate in a Volleyball module focused on developing serving, passing, setting, spiking, and blocking technique, and then applying those techniques as skills in a game-based approach. This unit is ideal for students enthusiastic about the sport of volleyball with a willingness to develop their technique, game understanding, decision making, and analytical skill.

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