The Quad Preparatory School

Course Catalog
Upper School
2019-2020
English

Becoming an Author
This course will explore the English language from the perspective of various styles of literature, in particular, short stories, poetry, and drama. Storytelling strategies will be used as a bridge from the oral to written forms of language. Looking at examples of literature from the genres of poetry, short story and drama will demonstrate the various ways that words, sentences and paragraphs can be crafted to create styles from abstract to satirical to humorous to emotional. Students will be creating their own writings through using the writing process of real authors. The power of vocabulary in terms of tone and mood will become a tool for analyzing what is read, and to gain facility within one’s own writing.

Identity & Community
This course is designed to help students connect with themes of identity and community through reading and writing. Students will understand the intent behind the author's character choices and actions. Students will be exposed to a variety of types of literature, including short stories, the novel *Absolutely True Diary of a Part-Time Indian* by Sherman Alexie, social justice themed news articles, the novel *The Outsiders* by S.E. Hinton, and some visual texts. Skills will include analyzing literary elements of characterization and conflict, exhibiting new vocabulary skills, engaging in thoughtful discussion, and making inferences about characters with the support of textual evidence. Students will complete a variety of projects, including a literary essay, a group art mural project, a researched speech, and an interview with someone in a career they are interested in. Students will also be participating in a book club to complete their independent reading throughout the year.

World Literature
This course will explore the global literature from the perspective of various styles, including short stories, poetry, drama, and novels. The central question of the course will be: “How much do we have in common with the world around us?” Students will be examining ideas of universality versus particularity, culture and traditions, global interactivity, and how the history impacts the present. Students will have regular classwork, including in-class writing, group assignments, class activities, and discussions. For homework, students will complete weekly reading reflections. At the end of each unit, students will complete an extended writing piece in response to the material presented. By the end of the year, students will both have a better understanding of concepts related to global citizenship, and the fundamental skills of high school English, including annotation and summary, evidence-based discussion, collaborative group work, literary analysis, research writing, and creative expression in various forms.

American Literature
A unique course isolating the American character by seeing it against the background of the Holocaust, the major European catastrophe, including America’s role as passive bystander. Starting in Europe mid-Century, we trace, through literary, historical and scriptural texts, the long arc of Jew-hatred culminating in the Shoah. Then we turn to the American experience, beginning at the founding, where a constitutional republic arose out of revolution, a republic that stood in contrast to its European precursors, the later with its stress on the Volk, the group, the nation, the other with its emphasis on the individual, and the rights that are inalienable in the individual, as the source of political identity. The second semester will trace to major American
texts, political, fictional and expository, the formation of an American character. And in the final month of the course, we will ask and answer to the best of our ability, if what had brought Europe to political chaos and moral darkness, could happen here.

English Language & Composition
This course is similar to an AP Language and Composition course, with a focus on rhetorical analysis of narrative and non-fiction texts and the development and revision of well-reasoned, evidence-centered analytical and argumentative writing. This course requires students to become skilled readers of prose written in a variety of rhetorical contexts and skilled writers who compose for a variety of purposes. At the heart of the course is the reading of various texts. In reading another writer’s work, students should be able to address: what is being said? To whom is it being said? How is it being said? And why is it being said? Additionally, we will drill down on the grammatical and syntactical mechanics of writing to develop editing skills for our own and other’s writing, while viewing the editor as a collaborator representing and acting out the intentions of another, speaking in the voice of another. Supplemental text: Frederick Crews, *The Random House Handbook.*
Mathematics

6th Grade Mathematics
This year will start with a review of integers and basic math facts (stacked addition and subtraction, 2- and 3-digit multiplication, and long division) and then cover estimation (as a way of considering whether an answer makes sense). Next we will work on all operations with fractions before moving on to decimals and percents. After that we will cover area (rectangles and triangles), rates, and the basics of graphing.

7th Grade Mathematics
In Grade 7, instructional time should focus on three areas: (1) developing understanding of and applying proportional relationships; (2) developing understanding of operations with rational numbers and working with expressions and linear equations; and (3) drawing inferences about populations based on samples. (New York State Next Generation Mathematics Learning Standards (2017))

Pre Algebra
In Pre Algebra, instructional time should focus on three areas: (1) formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations; (2) grasping the concept of a function and using functions to describe quantitative relationships; (3) analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem. Please note that while every standard/topic in the grade level has not been included in this overview, all standards should be included in instruction. (New York State Next Generation Mathematics Learning Standards (2017))

Algebra I
In Algebra I, students will build off a knowledge of variables, symbols that stand for arbitrary quantities, to study functions as objects in their own right. A function can be thought of as a particular way of producing an output value from an input value, and functions can be used to model many situations in the outside world. This course aims to follow New York’s Next Generation Algebra I standards. (http://www.nysed.gov/common/nysed/files/programs/curriculum-instruction/nys-next-generation-mathematics-p-12-standards.pdf), combining these with the more problem-oriented approach of The Art of Problem Solving.

Geometry
Geometry is intended to be the second course in mathematics for high school students. During high school, students begin to formalize their geometry experiences from elementary and middle school, using more precise definitions to establish the validity of geometric conjectures through deduction, proof, or mathematical arguments. Over the years, students develop an understanding of the attributes and relationships of two- and three-dimensional geometric shapes that can be applied in diverse contexts. (Taken from New York State Next Generation Mathematics Learning Standards (2017)).
Algebra II & Trigonometry
Algebra II will be a more in-depth look at the mathematical topics, including expressions, equations and functions, covered in Algebra I. Many situations in Algebra I that were limited or restricted in scope will be generalized: we can raise a number to any fractional power; we can divide polynomials by polynomials. Two areas of study that are new in Algebra II will be complex numbers and, especially, trigonometry, seen from an algebraic viewpoint. This course intends to follow New York’s Next Generation Algebra II standards (in http://www.nysed.gov/common/nysed/files/programs.curriculum-instruction/nys-next-generation-mathematics-p-12-standards.pdf).

Pre-Calculus
The precalculus standards are taken from the Plus standards from the Next Generation Mathematics Learning Standards. The Plus (+) Standards offer additional mathematics beyond Algebra II that students should learn in order to take advanced courses such as calculus, advanced statistics, or discrete mathematics. The Plus (+) Standards are not a high school course, however many of the standards will be covered in this course. Other topics will be covered as deemed appropriate for preparation for calculus. Plus (+) Standards provide coherence and extend concepts previously taught in Algebra I, Geometry, and Algebra II. (Adapted from New York State Next Generation Mathematics Learning Standards (2017)).

Calculus
Calculus is the mathematical study of change. In this course, we will study differential calculus, which lets us find out how a quantity is changing from moment to moment, and integral calculus, which lets us calculate the accumulation of change in a quantity. With these two tools, we will be able to solve a wide range of problems, including finding instantaneous speed, optimizing such quantities as time of travel or cost-efficiency, and calculating the areas and volumes of many different shapes. This course will approximately follow the standards for AP Calculus AB (https://apstudents.collegeboard.org/courses/ap-calculus-ab), with additional topics added if there is time.

Analytical Geometry
This course covers coordinate, discrete and analytic geometry for students who have already had calculus. It will serve as both a foundation for further college-level mathematics, such as linear algebra and multivariable calculus, and a deepening and broadening of “precalculus” topics through more complex problems drawing from multiple concepts and skill sets. Students will work with both mathematical theory—understanding and creating proofs and demonstrations—and applications of geometry to areas both within math—probability and number theory—and adjacent to math—like mechanics and mathematical modeling and simulation. Along the way, students will also further their skills in communicating about mathematics through the daily work of problem solving and more extended research projects and write-ups on topics of particular interest. Overall mathematical themes include switching between graphical, geometric and algebraic formulations of problems, more advanced problem-solving and -checking techniques like toy examples and limit cases, and “translating”
between representations of a problem. Depending on student interest, we are likely to touch on the historical and/or philosophical foundations of higher mathematics throughout the course.

**Science**

**Life Systems**
In this course we will look at the characteristics of life on Earth, and the systems that have evolved to support life over evolutionary history. We will focus on basic principles of scalability, and consider the systemic needs of living organisms as they disperse themselves into different niches/ecosystems. The different sizes of living organisms (i.e., large and small) provide the simplest examples that show life radiating into new niches; larger organisms occupy different niches than their smaller ancestors. What systems will need to evolve in a larger organism to allow it to survive in a new niche, as a result of its increased size alone? We will focus on the evolution of life systems that allow for dispersal of species into new niches/ecosystems, and attempt to address the question of the origin of life itself.

**Physical Science**
Upper-School Physical Science class is created to introduce the upper level school students to the essential concepts of introductory level Chemistry and Physics. The students will learn important topics of basic chemistry, including units on matter and change, atomic structure, the periodic table, chemical bonds and chemical reactions and etc. This laboratory science class consists of one semester on introductory Physics which is structured to teach more abstract concepts, such as motion and forces, power and work. Emphasis is placed on inquiry-style learning and development of skills such as observing, inferring, data collecting, graphing. The class will include a variety of instructional formats ranging from hands on labs to lecture and discussion. Students will be working on different assignments, which include group and individual projects. Occasionally supplemental videos and simulation lab activities from a variety of Internet sites will be used to enhance the learning experience. Students may be expected to keep a notebook with notes and vocabulary and participation in class activities is vital to the student’s success.

**Earth & Space**
The Earth and Space Sciences is a physical science that studies the dynamic processes that shape planet Earth as well as investigate our place in the universe and our galaxy. These include understanding the physical structure and behavior of planet Earth, the sun, and the moon. The interactions and impact of life on the planet will also be explored. In addition, we will study the evolution of the universe from the Big Bang to the present day. This course will use hands-on experimentation, activities, and direct instruction. By participating in a variety of activities that require observation, experimentation, communication, and manipulation of science equipment.
and materials, students will learn and apply their knowledge to solve problems, make decisions, and function as productive and responsible global citizens.

**Biology**
This course is a laboratory-based science class focused on the diversity and classification of living things, evolution, ecology, energy, cells, growth and development, and genetics. Labs may involve animal dissections, microscopes, observations of living thing, online laboratory simulations, and models.

Biology analyzes the fundamental characteristics of living matter on a microscopic to macroscopic continuum. Emphasizing the fundamental concepts of biochemistry, cellular biology, genetics, and evolution, students will explore the complexities that manifest our world’s biodiversity. The course targets the role that biology plays in the lives of students in today’s society. Each class uses a variety of teaching strategies including technology-based laboratory experiments, demonstrations, visual lecture aids and discussion. Hands-on laboratory exercises will provide a new perspective to the subject matter and reinforce the content investigated throughout instruction. Students will regularly use the Internet for research, sharing, and communicating. These essential skills will prepare students for future studies in the scientific field.

**Chemistry**
The chemistry course is designed to introduce students to the essential concepts of general chemistry. Topics include matter and change, scientific measurements, atomic structure, electron configuration models, periodic table of elements and their physical and chemical properties. Students will learn about chemical names, formulas and the major classes of chemical compounds. Students will explore mole-mole ratios and learn how to calculate chemical reactions. The class will incorporate a variety of instructional formats ranging from hands-on labs to lectures and group discussions. Individual and group assignments will be completed throughout the year and occasionally students will participate in simulated lab activities.

**Introduction to Physics**
This course is a student’s first introduction to the science of physics. Emphasis will be placed throughout the year on the importance of scientific units, accuracy, and method. The first semester will be devoted entirely to Newtonian mechanics, or classical physics; while the second semester will focus on electromagnetism and waves. While the course will have a strong mathematics component, emphasis will be placed on the student understanding the underlying concepts through real life demonstrations, and problem solving rather than simply memorizing formulae.

**Physics**
This physics course is an introductory level science course focusing on a broad range of topics including: motion, forces, momentum, energy, waves, light and electricity and magnetism. Students will be required to take information from the lecture portion of the class and apply it during both independent practice assignments and laboratory time. Students will be responsible
for independent practice assignments in addition to analysis and presentation of lab work. Periodically students will be presented with Assessment exercises to make sure that they are keeping up with the pace of the course.

**Physics C - Mechanics**
Adapted from AP Physics C curriculum: Mechanics is equivalent to a one-semester, calculus-based, college-level physics course, especially appropriate for students planning to specialize or major in physical science or engineering. The course explores topics such as kinematics; Newton’s laws of motion; work, energy and power; systems of particles and linear momentum; circular motion and rotation; and oscillations and gravitation. Introductory differential and integral calculus is used throughout the course.

**Physics C - Electricity and Magnetism**
Adapted from AP Physics C curriculum: Electricity and Magnetism is a one-semester, calculus-based, college-level physics course, especially appropriate for students planning to specialize or major in physical science or engineering. The course explores topics such as electrostatics; conductors, capacitors, and dielectrics; electric circuits; magnetic fields; and electromagnetism. Introductory differential and integral calculus is used throughout the course.
History

Geography
This course will explore Geography from the perspective of a Zombie Apocalypse – through projects which will engage students, provide standards-based lessons for teachers, and support project-based learning. Students will learn to think like geographers and also learn to survive the zombie outbreak. This curriculum also includes a companion graphic novel. Dead Reckon tells the story of a student struggling to survive in a zombie outbreak. The challenges set up in Dead Reckon are the same challenges students face in this curriculum. Dead Reckon is meant to keep students engaged and give them reasons to tackle the geographic problems they need to solve.

This curriculum uses the 2012 National Geography Standards. These standards were developed by the National Council for Social Studies, The American Geographical Society, The Association of American Geographers, The National Council for Geographic Education, and the National Geographic Society.

Engineering the Past
This course will examine the history of humanity and our pre-human ancestors through the lens of technological innovations, both positive and negative. The time covered ranges from prehistory to the late Medieval period, and how technology and the creation of new technology provided the impetus for the progression of civilization.

Expansion, Growth and Change in the New World
This course is a survey of American history from pre-Columbian era through the Civil War era. Topics include the migrations to the Americas, the colonial and revolutionary periods, the development of the Republic, and the Civil War. At the end of the semester students should be able to analyze significant political, socioeconomic, and cultural developments in early American history.

Global History I
The course will begin with the early civilizations of Egypt, Sumeria and the Fertile Crescent as well as well as ancient India and China; then it will proceed to an in-depth study of ancient Greece and Rome; next it will cover the Byzantine and Islamic Empires and also cover the Middle Ages in Europe. Throughout the course, significant attention will be devoted to how the geography - both the physical properties of the land and climate, as well as the various elements of human geography - can affect the economic, social, cultural and political development of a region. Students will work on the skills of careful reading, critical thinking and analytical writing throughout the course.

Global History II
This course will chronologically examine Global History through specific events that interconnect the world stage. We will begin in 1750 CE to the present, focusing on The development of various nations and the political, social, and economic factors that led to certain challenges. Industrialization, urbanization, and the accompanying problems are examined, as
well as the two world wars of the 20th century, the Holocaust, America’s emergence as a world power, and the Cold War.

**United States History**
This course is designed to provide students with an introduction to the major political, economic, social, and cultural developments in the United States beginning with the initial contacts between Native Americans, Europeans, and Africans and ending in the 1960s. The principal themes of the course will cover the impact that contact between the people of three different continents had on the United States, the creation of an "American" people and culture, and the evolving definitions of freedom and equality through time. We will explore America's history from a variety of different perspectives thus broadening (and challenging) our interpretation of who was, is, and can be an American and learn how people with different perspectives have experienced America differently through time.

**Government and Economics**
Students in Government will be given opportunities to become engaged in the political process by acquiring the knowledge, and practicing the skills necessary for active citizenship. Content specifications are not included, so that the course can adapt to present local, national, and global circumstances, allowing teachers to select flexibly from current events to illuminate key ideas and conceptual understandings. While this course is designed to be flexible in order to teach topics in real time, the syllabus will always be structured around the New York State Social Studies Framework but the order in which topics are presented and discussed will vary from year to year.

Economics, like Government, is designed to follow current events in politics and economics and engage in debates and examine economic issues that our nation and the world are experiencing throughout the duration of the course. Students will learn the brief history of Economic theories as well as apply their knowledge from US History to help contextualize economic issues our nation currently faces today. Students will complete their study in Economics with a unit on personal finance. While this course is designed to be flexible in order to teach topics in real time, the syllabus will always be structured around the New York State Social Studies Framework but the order in which topics are presented and discussed will vary from year to year.
World Languages

Introduction to Italian
Introduction to Italian introduces students to the Italian language and will allow them to connect the language to other disciplines. Students will learn practical applications of the language in various settings. Students will study Italian syntax, grammar and vocabulary through several mediums. Students will develop the ability to communicate in Italian in everyday situations, as well as develop the skills necessary for effective reading and writing in Italian. The focus of this course is to give the students confidence in their linguistic abilities. The study of formal grammar is emphasized through simple, but effective, repetitions. Sentences will start being short and simple and will progressively become more complicated. Students will be exposed to aspects of Italian culture via videos, written texts, and personal experience of the teacher. Students will often be asked to collaborate on projects designed to develop both their language skills and their knowledge of Italian culture.

Italian I
The course provides you with an introduction to modern spoken and written Italian. You will practice the four basic skills of listening/comprehension, speaking, reading and writing. You will be actively engaged in using the language by interacting with your classmates and teacher, and communicating about topics that are meaningful to you. You will learn how to understand and use the language in different social situations, through games, dialogues, individual/group projects and homework.
You will be exposed to contemporary Italian life and civilization through the use of supplementary cultural materials and media.

Italian II
Italian 2 is the continuation of Introduction Italian. Students will further develop their ability to communicate in Italian and will acquire the skills necessary for effective reading and writing. Students will be expected to write with a satisfactory level of accuracy. Students will continue to study Italian syntax, grammar and vocabulary through several mediums. Students will be exposed to aspects of Italian culture via videos, written texts, and personal experience of the teacher.

Italian III
Italian Level 3 provides you with an advanced knowledge to modern spoken and written Italian. You will continue to study the grammar, but larger space will be left to conversations, dialogues, personal readings and research. By the end of the school year, you will be able to talk about wishes, future plans, personal and impersonal opinions. You will also be able to read a historical novel in Italian. You will be exposed to contemporary Italian life and civilization through the use of supplementary cultural materials and the media.

Introduction to Russian
In this class, you will begin to acquire the four main language skills of speaking, listening, reading, and writing in Russian. We will be focusing on the Modern Standard dialect used for news and other more formal situations, and one with the most native speakers. By the end of the year, you will be able to communicate in Russian about familiar, everyday topics, express needs and wants, and give and understand basic personal information. Students will know more about aspects of Russian culture, including some music and art, different community customs, and everyday life in different places where Russian is spoken. Students will be asked to listen and read for understanding (input) before asked to respond in Russian by speaking and writing (output), since scientists tell us that “comprehensible input”—input that makes sense—is the most important thing for acquiring a language.

Latin I
In this class, we will use Latin actively: reading, writing, speaking, and listening while learning about ancient Roman culture and languages in general. Students will acquire Latin by the “nature method”, which focuses on fluency and eventually thinking in Latin, rather than analyzing language abstractly or translating Latin into English. In the first semester, the cultural topics will focus on geography and everyday life. In the second semester, we will focus on mythology and how we know what we do about the ancient world. Culture and language will not be separated: we will learn about Roman culture in Latin. Depending on student interests in each section, listening to fables and stories in Latin and creating our own class stories may be part of the course. By the end of the year, students will be reading more advanced adapted texts, discussing them in Latin and pursuing their own areas of interest in ancient culture and society.

Latin III
In this class, we will continue to use Latin actively: reading, writing, speaking, and listening while learning about ancient Roman culture and languages in general. Students will acquire Latin by the “nature method”, which focuses on fluency and eventually thinking in Latin, rather than analyzing language abstractly or translating Latin into English. In the first semester, the cultural topics will focus on the founding and oldest history of Rome and mythology. In the second semester, we will continue to discuss Roman history, focusing on the Republic and Empire, and start to reflect on how we know what we do about the ancient world. Culture and language will not be separated: we will learn about Roman culture in Latin. Depending on student interests in each section, listening to fables and stories in Latin (from all cultures) and creating our own stories may be part of the course. By the end of the year, students will be reading more complex adapted texts, discussing them in Latin in more sustained conversations, and pursuing their own areas of interest in ancient culture and society.

Advanced Latin IV
This course is an advanced Latin course wherein students review and consolidate knowledge of core structures and vocabulary while moving on to reading and responding to unadapted Latin prose and poetry. The focus in this course will still be on active use of the language and comprehension and expression strategies besides translation, but this year we will put somewhat more focus on translation and on formal grammatical analysis of Latin in English in preparation
for college-level Latin work. Our approach in this course prioritizes depth over breadth: while we will sample from a range of prose authors and some poetry, we will be focusing most of our time on 2-3 select authors or topics per semester. Class will be conducted in Latin as much as possible (aside from English grammatical analysis and limited translation). There will be regular substantial homework involving grammar and vocabulary work, reading and responding to texts in various ways, and increasingly complex Latin writing exercises.

**Introduction to Spanish**

In this class, you will begin to acquire the four main language skills of speaking, listening, reading, and writing in Spanish. By the end of the year, you will be able to communicate in Spanish about familiar, everyday topics, express your needs and wants, and give and understand basic personal information. You will know more about aspects of culture in different countries in the Spanish-speaking world: we will figure out what cultural topics to focus on later on, based on the class’s knowledge and interests, but they are likely to include some music and art, different community customs, and what it’s like to live in different places where Spanish is spoken.

How will we do all this? We will hold class as much as we can in Spanish, avoiding English except when it is necessary for safety or better understanding. We will focus not on grammatical analysis (though we’ll do it when we need it to make things make sense), but on using Spanish as much as possible, starting with the most common vocabulary and structures in the language. You will be asked to listen and read for understanding (input) before you are asked to respond in Spanish by speaking and writing in it (output), since scientists tell us that “comprehensible input”—input that makes sense to you—is the most important thing for acquiring a language.

**Spanish I**

This course will explore the four language skills of speaking, listening, reading, and writing in Spanish. The long term goal will be communicating on everyday topics, practicing real-life scenarios, and exchanging ideas on current events. Language class will focus on the following three categories: vocabulary, grammar, and culture. Students will watch videos, listen to songs, read texts, perform skits, create art, collaborate on projects, and work on their own. The best part of it all is that students will engage in and introduce activities and topics of their choice. Let’s have fun, be open-minded, and expose ourselves to the beauty of another language!

**Spanish II**

In this class, you will improve your abilities in the four main language skills of speaking, listening, reading, and writing in Spanish. By the end of the year, you will move beyond simple, familiar situations to start reading longer, authentic Spanish texts, writing at different lengths and for different audiences, and speaking at more length. You will know more about aspects of culture in different countries in the Spanish-speaking world: we will figure out what cultural topics to focus on later on, based on the class’s knowledge and interests, but they are likely to include some music and art, different community customs, and what it’s like to live in different places where Spanish is spoken.

How will we do all this? We will hold class as much as we can in Spanish, avoiding English except when it is necessary for safety or better understanding. We will focus not on grammatical
analysis (though we’ll do it when we need it to make things make sense), but on using Spanish as much as possible, starting with the most common vocabulary and structures in the language. You will be asked to listen and read for understanding (input) before you are asked to respond in Spanish by speaking and writing in it (output), since scientists tell us that “comprehensible input”—input that makes sense to you—is the most important thing for acquiring a language.

Maybe the greatest gift in a language class is how much choice we have in what we discuss—as long as we are doing it in Spanish! The more you share what you are interested in, the better I can pick things that will be interesting and meaningful to you. That does not mean that class is just for entertainment—but we will often have fun in Spanish creating wacky, memorable stories together, playing games, and making things.

**Spanish III**
This course will take a close look at the geography, history, literature, and culture del mundo hispanohablante. Every unit is divided into different countries or regions. We will also work with various advanced grammar concepts within these units. There are two goals intertwined in this class. The first is being knowledgeable and understanding the culture of others. The second is increasing fluency via literature, compositions, and conversations in class.
ELECTIVE COURSE OFFERINGS

Humanities

Human Origins
This course will introduce popular ideas and topics in anthropology and archaeology, as well as examining what we know about our pre-human ancestors. Perfect for exploring an interest in human prehistory, or preparing for higher-level courses in this subject.

Classical History
Classical History is a rich topic that is studied in schools and universities around the world. In this course, students will understand why, and be able to identify key points of Classical culture and history that directly inform our lives today. We will be studying Mesopotamian, Egyptian, Roman, and Greek mythology as well as history, as to the people of the time, they were often one and the same.

Creative Writing
Students will read various works of poetry and fiction from numerous authors, past and present. They will engage in analysis and discussion. Students will create works of descriptive writing, fiction, drama and poetry. Learning to collaborate and share ideas, along with positive criticism will shape your pieces into the works you desire. Talent is not a must but an open mind and love of words are all you need!

Archeology
Students explored how well archaeological remains survive and affected by the materials they are made of and the environment in which they may lie for centuries before being discovered. We also examined various excavation sites across the world (via the internet) to some of the most amazing discoveries that now rest in museums. Learning how archaeologists use the numerous tools, methods and data was part of the complexity and highly fascinating science.

Philosophy
Introduction to some of the basic philosophical problems and the various approaches to their solutions. The student will be exposed to traditional philosophical systems with emphasis on how these systems attempt to solve the problems confronting human existence.

*Model UN
Model UN will require a written product
  *Teacher permission required

*Student Council
Natural born leader, then student council is for you!
  *Must be nominated by a teacher to join

Quad Student News
Keep our school community informed by reporting on Quad’s current events, dynamic interviews and the endless arts and entertainment of NYC! All you need is the desire to be creative and the ability to work collaboratively.
Quad Cafe
Impress others with the culinary skills you’ll pick up by joining Quad Cafe! Students will have the opportunity to explore new cuisines and practice common cooking techniques. Whether your an experienced chef, food lover or simply interested in learning a useful skill, you are welcome in the Quad Cafe kitchen.

Performing Arts

Improv
Improvisation is a form of unscripted theater developing fundamental performance skills in (usually) comedic scenes originated spontaneously by the actors. We will use and explore several prompts for improvisations, including “first lines,” “motives, objectives and goals,” as well as following the fundamental guidelines for meaningful improvs, including the power of “yes, and,” “making your improv partner look good,” and the relationship of acts, characters, place, time and agency.

*Drama
Performance based drama using scripts
*Teacher permission required

STEAM Electives
All STEAM electives can/will use the 3D printer

Chess, Checkers, and Logic Games  Brighten your life and explore the world of logic games. Learn to master the game of chess, checkers, Chinese checkers and other logic games.

Robotics
Learn robotics through Lego Mindstorm. This course will incorporate components of coding.

Engineering, Architecture, & Design
Using the design process, students will create & innovate their own structures & objects

Makerspace
Beginner to expert, design and creating using STEAM (science, technology, engineering, art, and math) in any field of your interest.

Textile Art
Explore the world of patterns through sewing, knitting, crochet, embroidering, quilting, jewel making, weaving, toy making, leather work, etc.

Computer Science
This course serves as an introduction to the field of computer science, with a focus towards programming. It will cover an array of topics, including Data Types, Variables, Loops, Functions, Objects, Classes, Decision Structures and Arrays.
Intro to Biotechnology (Prerequisite = Biology)
Using Quad Prep’s state of the art lab equipment, this hands-on class will train you to complete real-world research. During this course, you will engineer recombinant DNA, insert an engineered plasmid into bacteria, isolate the DNA from the bacteria, isolate and purify the resulting protein, and assay the activity of the protein. Having completed this course, you will have developed both the process and technical skills to work in a laboratory setting.

Forensic Science (Prerequisite = Biology)
Forensic Science is a course that uses a structured and scientific approach to the investigation of crime and the psychology of criminal behavior. You will learn terminology and investigative procedures related to crime scene, questioning, interviewing, criminal behavior characteristics, truth detection, and scientific procedures used to solve crimes. Using scientific methods, you will collect and analyze evidence through case studies and simulated crime scenes such as fingerprint analysis, ballistics, and blood spatter analysis.

Anatomy
We will study evolution through drawing. Each student will engage a series of artistic studies of comparative anatomy that evidence evolution. Our primary focus will be on art and drawing as a means to greater understanding of evolutionary biology.

ART ELECTIVES

Art for Beginners
This class will introduce students to art through the color wheel and how to mix colors, pixel art, dot to dot, tracing and lightbox work, Mandala patterns & design, Celtic art, buy using, and step by step drawing exercises.

Model Making (Prerequisite = Model Making I)
Explore the world of model making using model kits and recyclables. Students will bring in model kits of their choosing and create an environment that goes with it (model - airplane, environment - runway, airport, or hanger) (model - spaceship, environment - space station or planet) (action figure - toy soldier, environment - battle scene)

Observational Art
Students will create self & peer portraits through drawing and painting; study & draw the human form, body and face; experience still and life drawings; and learn about observational drawing using our school environment and the outside world as well. (May include local field trips to parks)

Retrospective of an Artist
Explore the life and work of important artists from Van Gogh & Rothko, Michelangelo to Picasso, and everyone else in between. Each artist will be explored first by documentary films. Then we will take a look at their art and style, followed by students producing a drawing and or painting in the style of the artist, to wrap up the study.
Gods & Monsters (Mythical Creatures form the Ancient World)
Students will look at artwork from the ancient world and create their own versions of: Greek, Roman, Egyptian and Aztecs gods and monsters, folklore and tales of Indian deities, Norse gods, dragon slayers, Bigfoot, and the Loch Ness monster.

Building Structures
Students will create and build structures with Legos, Knex, Mega blocks, and Nano blocks. Students may bring in small Legos kits of their choice and build around that subject.

MUSIC ELECTIVES

Instrumental Music Lessons
Involves the study of one instrument for the entire year and is open to any level of ability. Requires regular student practice at home. Class may be 1:1 or small seminar. Choice of instrument is open, but the following are recommended:
- Piano
- Brass instruments: trumpet, trombone
- String Instruments: violin, viola, cello
- Drums/Percussion
- Guitar
- Bass

Keyboard Ensemble
Open to students with an intermediate level of piano skills. The group focuses on covering many styles of music and playing together as a group.

Percussion Ensemble
For students interested in drumming as part of a larger ensemble. Strong rhythmic feel and the desire to be part of a disciplined group is required.

Introduction to Music Technology
Exploring the basics of creating and editing sound in the digital world. Focus on introductory skills and group projects. Open to any level of experience.

Next Steps in Music Technology
For students with some prior experience with music technology. Emphasis on longer projects and more independent work.

Quad Prep Band
For students with an intermediate level of skill on their instrument. Offers a chance to play a variety of music styles in a “band setting” along with other students playing various instruments.
Music Composition
For students interested in composing and learning to notate their own music. No prior experience is needed. Students will be introduced to basic music theory and note reading.

Exploring American Music
Course to include listening, performing, creating, and composing in various genres of American Music including Jazz, Blues, Motown, Rock, and Pop. No prior experience required. Class will have various projects and homework assignments.

1:1 Voice
This is a 1:1 course provides students an opportunity to receive individualized attention as they discover their voices and build a singing and performing repertoire.

Vocal Ensemble
This course provides students an opportunity to sing together as part of an ensemble as they discover their voices and build a singing and performing repertoire as a group. The selection of music will be geared toward the students enrolled in the class to showcase their strengths as a group.