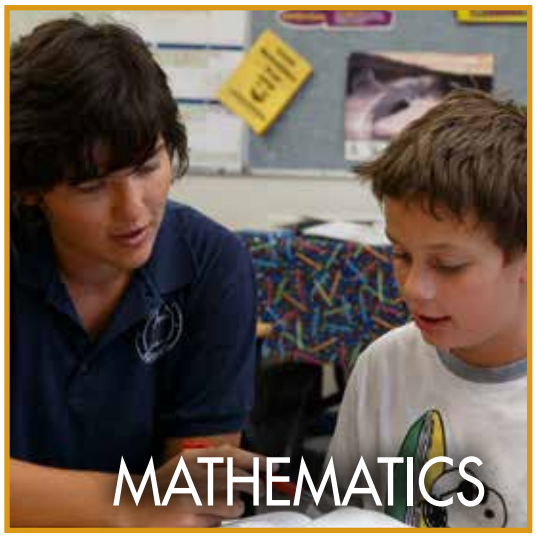
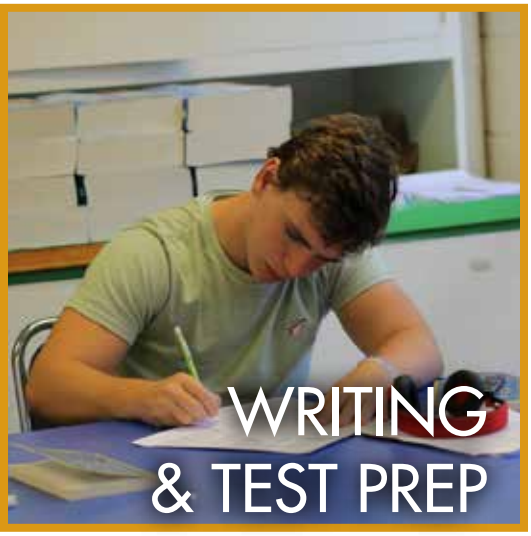
2022 SUMMER

FAIRFAX COLLEGIATE
Have Fun And Learn
1993

FOR RISING GRADES 3-12





RISING GRADES 3-12
IN-PERSON
AND ONLINE

FAIRFAX COLLEGIATE SUMMER 2022

This summer your child can have fun and learn!

Since 1993, the Fairfax Collegiate Summer Program has provided challenging and engaging courses in writing, mathematics, science, public speaking, admissions prep, engineering, computer science, filmmaking, photography, design, technology, and gaming.

Small classes are available both in-person at locations throughout Northern Virginia, and online via Zoom. Courses are built around creative activities that are captivating and entertaining, as well as informative.

Summer Program instructors include undergraduate and graduate students at leading universities, as well as area public and private school teachers. They take into account each student's interests and needs, and students are able to get help from an instructor at any time.

Over 4,000 students attend Fairfax Collegiate programs each year. Register today to reserve your child's opportunity for academic and creative growth at Fairfax Collegiate!

SUMMER 2022 LOCATIONS

Ashburn Campus
Loudoun School for Advanced Studies
20577 Ashburn Rd.

Chantilly Campus
St. Timothy Catholic School
13809 Poplar Tree Rd.

Dulles Campus
St. Veronica Catholic School
3460-B Centreville Rd.

McLean Campus
Redeemer Lutheran Church
1545 Chain Bridge Rd.

Reston Campus
Northern Virginia Hebrew Congregation
1441 Wiehle Ave.

South Riding Campus
St. Paul VI Catholic High School
42341 Braddock Rd.

Tysons Campus
BASIS Independent McLean
8000 Jones Branch Dr.

Vienna Campus
Green Hedges School
415 Windover Ave. NW

Summer 2022 Online

You Got This!
Content • Practice • Support • Online • Interactive

Python Picante
Accelerated • Online • Interactive

PROGRAM OVERVIEW

SUMMER 2022 SESSIONS AND HOURS

Session	Start Date	End Date	Duration	Online		In-Person	
				Half Day	Full Day	Half Day	Full Day
Session 1	June 13	June 24	10 days	$315	$525	$550	$865
Session 2	June 27	July 8	9 days*	$285	$475	$500	$785
Session 3	July 11	July 22	10 days	$315	$525	$550	$865
Session 4	July 25	August 5	10 days	$315	$525	$550	$865
Session 5	August 8	August 19	10 days	$315	$525	$575	$915

*No class July 4

Hours	Online	In-Person
Morning Classes	10:00 AM to 12:00 PM	8:30 AM to 12:00 PM
Afternoon Classes	1:00 PM to 3:00 PM	12:30 PM to 4:00 PM
Supervised Lunch Period		12:00 PM to 12:30 PM
AM Extended Care*		7:30 AM to 8:15 AM
PM Extended Care*		4:15 PM to 6:00 PM

*The fee for AM or PM Extended Care is $100 per session or $12 per day.

Siblings/Multiple Sessions

Register siblings or for multiple sessions and save 5%

Early Registration

Pay in full by April 15 to save 5%

SUMMER PROGRAM REGISTRATION

Plan your child's schedule and register online at *www.FairfaxCollegiate.com*

Grade Levels and Placement

Course grade levels are *rising grade levels*, the grade levels students will enter in the fall of 2022. Please contact us before enrolling a child in a course designated for older or younger students.

Registration Deadlines

We enroll students until classes are full. Many classes are full by late April. We maintain waiting lists for full classes.

Payment Options

A non-refundable deposit of $100 per session (applied to the total cost of the program) is due at registration. The balance is due June 1.

Registration Changes

There is no fee for changing sessions, locations, or classes. (There may be a balance if the new class has a higher price.)

Cancellation Policy

For cancellations before June 1, Fairfax Collegiate will refund program fees less the non-refundable deposit of $100 per session. After June 1, we will provide a credit for program fees paid for use by a family member in a future program.

Emergency Contact Form

For in-person classes there is a one-page *Emergency Contact and Permission Form*. There is no required health form.

Complete Participation Terms

Please visit *www.FairfaxCollegiate.com/summer/participation-terms.*

You Got This!

Content • Practice • Support • Online • Interactive

- **Content: Exactly what you need to know to do your best**
- **Practice: Daily assignments and mock exams**
- **Support: Small classes and individual attention**
- **Online: Zoom from your house or on the go. Convenient and economical**
- **Interactive: Live instruction with peers online**

Math, CS, and Science Boosts

AAP Math 5

Get excited for measurements, statistics, and more as you prepare for 5th grade math as an AAP student.

AAP Math 6

Get a head start on pre-algebra by learning about solving and graphing equations, geometry, and expressions.

Algebra

Prepare for next year's Algebra class with an overview of graphing, solving equations, and the quadratic formula.

Geometry

Shape up in time for your upcoming Geometry class with a look at triangles, circles, and 3D figures.

Algebra II

Review what you learned in Algebra I, and apply it to new concepts like complex numbers, logarithms, and probability.

Precalculus

Get a head start in Precalculus by learning about trig, vectors, and limits.

Calculus

Prepare for the highest levels of high school math through learning about limits, derivatives, and integrals.

Computer Science

Hello World! Become proficient in Java by learning about keywords, variables, loops, and more.

AP Computer Science

Become an expert coder as you learn about boolean expressions, arrays, inheritance, and recursion.

Biology

Come alive with an in-depth look at cell structure, genetics, and more to prepare for high school biology.

AP Biology

Receive an overview of college-level biology topics including heredity, gene expression, and ecology.

Chemistry

Unleash your inner chemist with a preview of high school chemistry topics including atomic structure, chemical equations, and solutions.

AP Chemistry

Get ready for AP Chem with an advance look at molecules, reactions, thermodynamics, and pH.

Physics

Get ready for your upcoming physics class by looking in advance at laws of motion, electricity, and gravity.

AP Physics

Get ready for AP Physics 1 with an advance look at kinematics, gravity, energy, and types of motion.

Writing Boosts

Elementary School Composition

Gain confidence in your writing skills by mastering sentence structure and paragraph composition.

Middle School Composition

Improve writing through multi-paragraph assignments and direct instruction in grammar and organization.

High School Composition

Create sophisticated writing through understanding syntax, organization, and transitions.

College Application Essays

Learn how to write compelling essays to get into your dream college.

Admissions Boosts

TJ Personal Statements

Showcase your personality and interests to demonstrate why you are a good fit for TJ.

TJ Problem-Solving Essay

Explain your problem-solving process in writing to impress the TJ admissions committee.

Academies of Loudoun

Learn the STEM and writing skills needed to wow the admissions officers at the Academies of Loudoun.

PSAT 10-NMSQT

Boost your score on the PSAT to earn a National Merit scholarship by preparing for the math and language arts content.

SAT Math

Prepare for the math sections of the SAT by reviewing tested math concepts including algebra and geometry.

SAT Verbal

Practice the reading and writing sections of the SAT to boost your score and your own proficiency in comprehension and syntax).

FairfaxCollegiate.com/you-got-this

WRITING

Work towards producing polished writing about complex ideas.

Writing classes are small-group seminars, taught by skilled writers, and balance direct instruction in writing with opportunities for creativity and self-expression.

Students write every day, meet individually with instructors, and receive detailed suggestions for improvement.

Instructors write evaluations for each student at the end of the course.

Writing Fundamentals
Grades 3-4

Write a variety of grammatically correct sentences, and build a solid foundation for writing paragraphs.

This course emphasizes word choice, spelling, sentence structure, paragraph organization, and proofreading.

Instructors provide detailed suggestions for improving spelling and grammar as well as ideas and organization.

Writing U.S. Geography
Grades 3-4

Analyze physical, political, and historical maps of the United States, and start writing about complex ideas.

Topics include landforms, climate, natural resources, transportation, agriculture, industry, government, demographics, education, and culture.

Students practice writing clear sentences, paragraphs, and multi-paragraph essays in the context of U.S. geography.

Story Writing
Grades 3-4

Write, share, discuss, and revise your own short stories, and publish your writing in a class anthology.

Students practice the writing process and explore components of an effective story. Topics include compelling characters, memorable settings, plot outlines, and point-of-view.

Students workshop their stories in class and receive detailed feedback from instructors.

Reading Reinforcement
Grades 3-4

Read classic poems, fables, and stories, and write about themes, plots, and characters.

Assignments include summaries, reading comprehension exercises, and interpretations.

Students write responses to the readings and receive detailed feedback from their instructor.

Writing Skills & Grammar
Grades 5-6

Write simple, compound, and complex sentences, learn note-taking, create outlines, and draft, revise, and edit well-organized paragraphs.

This writing course focuses on organization, paragraph construction, grammar, spelling, and mechanics.

Topics include thesis statements, transitions, active voice, word choice, and common errors.

Writing U.S. Presidents
Grades 5-6

Read primary and secondary sources about the U.S. Presidents from George Washington to Franklin D. Roosevelt, and write about historical events and the presidents' lives.

Topics include the personal backgrounds, political careers, and presidential administrations of presidents.

Students write clear sentences, paragraphs, and essays about the lives of these individuals and their impact.

Creative Writing
Grades 5-6

Write, share, discuss, and revise your own personal narratives, short stories, plays, and poems, and publish your writing in a class anthology.

Students revise drafts of their works based on instructors' written comments. Students may enter their works into writing contests.

Strategic Reading
Grades 5-6

Read articles, essays, and stories, practice close reading and note-taking, and write summaries and interpretations.

Students learn and apply reading strategies and tools including looking for cause and effect, outlining, questioning, skimming, summarizing, and synthesizing.

Writers' Workshop
Grades 7-9

Write, share, discuss, and revise your own short stories, poems, articles, and personal essays about topics that are interesting to you.

This course provides middle school students with intensive practice in writing. Classes are small-group seminars.

Students learn the entire writing process including brainstorming, outlining, composing, editing, and revising.

Writing for High School
Grades 7-9

Develop sentence variety, practice note-taking and outlining, and become proficient with writing five-paragraph essays.

Topics include essay and paragraph structure, persuasive arguments, thesis statements, clean style, mechanics, grammar, diction, and idioms.

Reading for Meaning
Grades 7-9

Read opposing viewpoints about contemporary issues, practice close reading, note-taking, and summarizing, and start becoming a critical reader.

Genres include short stories, journalistic writing, essays, and poetry.

Classroom exercises develop important literary analytical tools including compare/contrast, cause/effect, and prediction.

Students write a variety of compositions on the results of their analyses and the literary themes expressed in the texts. They also write an original work.

Writing the Constitution
Grades 7-9

Read and discuss the U.S. Constitution, and write summaries and interpretations while practicing proven techniques for writing about complex ideas.

Students use conjunctions, appositives, and varied sentence types to write sentences about the material. They plan, outline, and write well-organized paragraphs and multi-paragraph essays.

Academic Writing
Grades 9-12

Improve upon sentence expansion, note-taking, single-paragraph outlines, the writing process, and multi-paragraph organization.

Students write and revise short papers and essays on topics of personal interest and learn academic editorial and citation styles.

The course is taught in a seminar style and features discussion of notable examples of different forms of academic writing.

Students write daily in academic style and receive detailed corrections and suggestions for improvement from instructors.

MATHEMATICS

Preview or review math covered in school-year math courses. Each Fairfax Collegiate summer math course features:

- A diagnostic test to help plan a customized course of study
- Daily small group instruction, one-on-one coaching, and enrichment activities
- A final test to highlight areas of growth and areas for improvement
- Frequent progress updates
- Practice materials to take home

Fairfax Collegiate Math 3-4

Grades 3-4

Keep your math skills sharp over the summer.

Fairfax Collegiate Math 3-4 covers 3rd and 4th grade math topics such as addition and subtraction, multiplication and division, fractions, decimals, measurement, geometry, probability, patterns, graphing, and word problems.

Each day's schedule includes small-group instruction, individual practice, one-on-one coaching, enrichment, and math games.

Math Workshop

Grades 3-4

Enrich your understanding of 3rd and 4th grade math topics with physical models and new mental strategies.

Lessons center around the use of modeling tools such as base ten blocks, two-color counters, and fraction circles. Once students understand how to use each model, they connect their understanding back to typical pen-and-paper methods in a small-group setting.

The specific areas of focus are: addition, subtraction, multiplication, division, fractions, decimals, and measurement.

Math Games

Grades 3-4

Explore the fun and practical side of math with this game-themed course.

Students learn and play a variety of math-centered board games and puzzles to practice and improve their quantitative and logical reasoning skills. Examples of games include Equate, 24 Game, and Swish. Recurring themes include number sense, mental math, game theory, and spatial reasoning.

As a final project, students choose a game and make a new version with an altered ruleset. Then, they give a short presentation on their new game and playtest it with their classmates.

Advanced Math 3-4

Grades 3-4

Use summer as an opportunity to work beyond 3rd and 4th grade level standards.

This course aligns with 5th and 6th grade math topics, including fractions, decimals, integers, geometry, perimeter and area, statistics, ratios and proportions, and algebra.

Each day's schedule includes small-group instruction, individual practice, one-on-one coaching, enrichment, and math games.

Fairfax Collegiate Math 5-6

Grades 5-6

Make the transition from elementary to middle school math with confidence.

Fairfax Collegiate Math 5-6 covers the same topics as public school 5th and 6th grade math classes, including fractions, decimals, integers, geometry, perimeter and area, statistics, ratios and proportions, and algebra.

Each day's schedule includes small-group instruction, individual practice, one-on-one coaching, enrichment, and math games.

Problem Solving

Grades 5-6

Learn key strategies for solving challenging word problems.

Students solve problems using strategies such as "think one" and "two-ten", pictorial representations, and Venn Diagrams.

Areas of focus include algebra, function machines, pattern and logic problems, fractions and ratios, geometric problems, permutations, and cryptarithms.

Advanced Math 5-6

Grades 5-6

Use summer as an opportunity to work beyond 5th and 6th grade level standards.

The course closely aligns with topics that would usually be part of a 7th to 8th grade curriculum, such as algebraic expressions and equations, slope and graphing, transformations, and complex geometry problems involving area, perimeter, surface area, and volume.

Math For Middle School
Grades 6-8

Reinforce critical middle school math skills.

Math for Middle School 6-8 covers the same topics as public school 7th and 8th grade math classes, including rational and irrational numbers, evaluating expressions, solving equations, proportional and additive relationships, slope and graphing, geometry, volume and surface area, and transformations.

Intro to Algebra
Grades 7-9

Prepare for the challenges of high school Algebra.

Topics include evaluating expressions, the language of algebra, solving equations and systems of equations, relations and functions, slope, graphing and writing linear equations, simplifying exponents, operations on polynomials, factoring, and solving quadratic equations.

Intro to Geometry
Grades 7-9

Prepare for the challenges of high school Geometry.

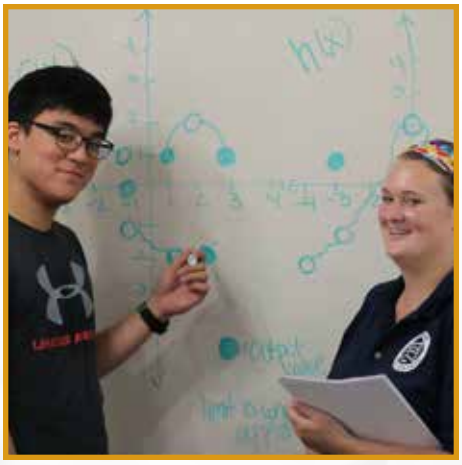
Topics include distance, midpoint, and slope formulas, constructions, parallel lines and angles, triangle properties, congruent, similar, and right triangles, quadrilaterals, polygons, circles, 3D figures, and transformations and symmetry.

Advanced Algebra Topics
Grades 7-9

Learn about Algebra II early in your educational career.

Familiarity with high school Algebra I is a pre-requisite; all students who feel confident with Algebra I will expand their knowledge and find value in this class.

Topics include expressions, order of operations, translating word problems into math, functions, quadratic equations, polynomials, radicals, imaginary and complex numbers, logarithms, and function analysis.



Intro to Algebra II
Grades 9-12

Prepare for high school Algebra II.

Topics include operations on rational and radical expressions, factoring and solving polynomials, complex numbers, sequences and series, exponential and logarithmic functions, statistics, and permutations and combinations.

Intro to Precalculus
Grades 9-12

Make the transition to advanced high school-level math with confidence.

This course is a focused workshop for the concepts necessary to succeed in high school Precalculus, including a careful review of Algebra II topics, solving and graphing trigonometric equations, the unit circle, inverse trig functions, matrices, and limits.

Intro to Calculus
Grades 9-12

Get ready to tackle one of the most advanced high school-level math courses.

This course is a focused workshop for the concepts necessary to succeed in Calculus, including limits, estimating and calculating derivatives, applications of derivatives, estimating integrals, calculating indefinite and definite integrals, and applications of integrals.

SCIENCE

Advance the boundaries of your scientific knowledge by reading, thinking, discussing, hypothesizing, and experimenting.

Students explore a variety of topics within the fields of biology, chemistry, medicine and forensics.

All of our science courses are built around hands-on labs.

Chemistry Concepts
Grades 3-4

Perform experiments to learn about matter, phase changes, acids, bases, and reactions.

Students work in small groups. Instructors closely supervise students, and experiments are age-appropriate and use non-hazardous chemicals and supplies.

Hands-On Science
Grades 3-4

Complete labs to get hands-on experience with biology, chemistry, and physics.

Biology activities include plant, bacteria, microscope, and epidemiology labs. Chemistry activities include water labs, chemical reaction labs, and acid and bases labs. Physics activities include force and friction labs, bridge building experiments, and energy and power labs.

Spy Science
Grades 3-4 & Grades 5-6

Hone your detective skills, and learn the secrets of spying, sleuthing, and subterfuge.

Topics include fingerprint and handwriting analysis, chemical analysis, forgery identification, homemade spy gadgets and surveillance tools, encryption, and code breaking.

Students conduct spy missions to apply what they have learned throughout the course.

Chem Workshop
Grades 5-6

Learn about chemistry through a variety of hands-on exercises with solutions and reactions.

Topics include experimental design, the periodic table, atomic structure, chemical bonds and reactions, acids and bases, phase changes, pressure and temperature, and solubility.

Activities include modeling atoms, making casein glue, investigating fluid viscosity, simulating acid rain, refining invisible inks, and exploring chemical reactions.

Forensic Science
Grades 5-6 & Grades 7-9

Become a crime scene investigator with labs to help you solve mysterious cases.

Labs include crime scenes, tool marks, chemical analysis, counterfeit documents, fiber identifications, fingerprints, handwriting analysis, forgeries, ink chromatography, shoe prints, forensic anthropology, and blood splatter patterns.

Each class attempts to solve a simulated crime using the forensic techniques learned.

Human Biology & Anatomy
Grades 5-6

Use hands-on activities to learn about the major organ systems

Research four key organ systems: the cardiovascular system, the digestive system, the nervous system, and the musculoskeletal system.

Class activities include reading assignments, discussions, hands-on exercises, experiments, working with human skeleton and body anatomy models, and medical simulations. Students create life-sized posters of their organ systems.

Medical Science
Grades 7-9

Investigate our cardiovascular, pulmonary, lymphatic, and musculoskeletal systems through dissection and phlebotomy simulations, and learn about pathology, epidemiology, and the treatment of disease through pharmaceuticals.

Survey the scientific foundations of modern medicine.

Topics include human anatomy, organ systems, pathology, epidemiology, and pharmacology.

Activities include demonstrations, labs such as bacterial cultures, and simulations of medical procedures such as suturing and phlebotomy.

Animal Physiology
Grades 7-9

Complete dissections of preserved specimens to learn about animal anatomy, physiology, and organ structures.

Students learn about major differences in physiology between different phyla and classes and discuss evolutionary adaptation.

Students complete a variety of full laboratory dissections of preserved specimens, including owl pellets, annelids, frogs, rats, sheep brains, and dogfish sharks.

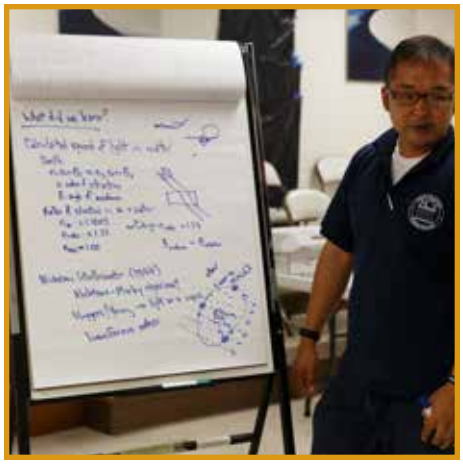
Topics include animal taxonomy, skeletons, organs, the nervous, circulatory, and digestive systems, and convergent and divergent evolution.

Neuroscience
Grades 7-9

Use computer simulations and actual nerve signal measurements to learn about the nervous system.

Topics include brain structure, motor control, neurons, neurotransmitters, action potentials, signal transduction, potentiation, memory, and neurodegenerative diseases.

Experiments include computer simulations, insect and human motor nerve signal measurement, and brain wave pattern observation and interpretation.



PUBLIC SPEAKING

FairfaxCollegiate.com/speaking

Get comfortable speaking, standing out, negotiating, and leading.

Small classes and supportive instructors create a sympathetic environment even for students who have never practiced public speaking before.

Courses address public speaking, debate, leadership, advocacy, and negotiation.

Persuasive Speaking
Grades 3-4

Create compelling and thoughtful arguments to present in front of peers while practicing public speaking skills.

Topics are of direct relevance to students. Students argue both for and against each proposition.

Instructors emphasize mutual courtesy and careful listening.

Public Speaking
Grades 3-4

Write and deliver a variety of speeches on topics of your choosing to gain confidence in a group setting.

Instructors provide detailed individual suggestions for improving both content and delivery.

Students learn how to encourage each other and provide constructive feedback.

Elementary Debate
Grades 5-6

Learn the basics of debate as you go head-to-head against classmates to discuss relevant topics.

Debate topics are both challenging and directly relevant to students.

Group exercises develop public speaking, critical reasoning, argument construction, rebuttal, and evidence presentation skills.

Speech
Grades 5-6

Deliver written, extemporaneous, and impromptu speeches in front of an audience each day, and build up your skills in public speaking.

Instructors critique voice inflection, eye contact, body language, gestures, word choice, visual aids, and tone.

The first week features daily speech exercises. Students research, write, and rehearse individual speeches the second week.

Leadership
Grades 5-6

Create a proposal to address a local or national issue, and learn how to effect change in the community.

Instructors help each student select a local or national issue of personal concern and devise a proposal to address the issue. Students then present their solutions and respond to the audience's objections, concerns, and suggestions.

This exercise is repeated the second week with students incorporating their experiences from the first week.

Middle School Debate
Grades 7-9

Conduct research, gather evidence, and write persuasive arguments as you participate in daily debates over important issues.

Topics in daily debates include issues of national and personal importance.

Mock Trial
Grades 7-9

Take on the role of an attorney, witness, judge, or jury member as you learn about the American court system and participate in trials.

Activities include selecting jurors, delivering opening statements, examining witnesses, presenting evidence, making closing arguments, and deliberating verdicts. Discussions address the role of courts, due process, justice, civil and criminal trials, and standards of proof.

Model U.N.
Grades 7-9

Learn about how the United Nations functions by acting as an ambassador and negotiating with other countries to draft resolutions and solve global problems.

Students develop critical thinking, negotiating, public speaking, debating, and writing skills.

Topics include the United Nations, the U.N. Security Council, U.N. rules and procedures, speech-making, negotiating, caucusing, and drafting resolutions.

High School Debate
Grades 9-12

Prepare for high-school level debate competitions through daily practice and exploring logic, impacts, and cross-examination.

Topics include logic, research skills, case formation, impacts, cross-examination, flow, frameworks, and optimal debate strategies.

ADMISSIONS PREP

FairfaxCollegiate.com/admissionsprep

Prepare for admission to selective high schools and colleges. All prep classes

- Review relevant content
- Familiarize students with the test or essay format and question types
- Provide timed practice and realistic simulation of the test or essay administration
- Address the psychological challenges for maximizing performance

TJ Admissions Prep

Grades 7-8

Prepare for the Thomas Jefferson High School admissions process, with an emphasis on crafting strong personal statements and problem-solving essays.

Students practice answering a variety of Student Portrait Sheet essay prompts and learn a framework for responding to the Problem-Solving Essay question.

Each class meeting includes instruction and feedback to support students in efficiently writing organized, informative, and grammatically correct essays under time constraints.

Instructors write evaluations with suggestions for improvement.

Academies of Loudoun Prep

Grades 7-8

Prepare for the Academies of Loudoun (AOS and AET) admissions exam.

Students review content for each of the sections of the STEM Thinking Skills Assessment and learn a variety of effective test-taking strategies. Students also prepare for the Writing Assessment, including significant time practicing personal statements, instruction and feedback in writing organized, informative, and grammatically correct essays, and strategies for how to efficiently work under time constraints.

Students take two full-length practice tests, and receive a written evaluation after the class is complete.

PSAT Prep

Grades 7-9

Prepare for the PSAT, the qualifying test for the National Merit Scholar program.

The math review covers algebraic expressions and equations, graphical representations, statistics, and strategies for the calculator and no-calculator portions of the test. The reading and writing review emphasizes grammar and mechanics, locating information, making inferences, and analyzing rhetoric.

Students complete two official practice PSAT tests and become familiar with question formats, test scoring, and time-management. Instructors write evaluations with suggestions for improvement.

SAT Prep

Grades 9-12

Prepare for both the math and reading/writing sections of the SAT.

The math review covers SAT Algebra, Geometry, and Algebra 2 topics and strategies for the calculator and no-calculator portions of the test. The reading and writing review emphasizes locating and synthesizing information, making inferences, and analyzing rhetoric.

Students complete three practice SAT tests under timed conditions and become familiar with question formats, test scoring, and time-management strategies. Instructors write evaluations with suggestions for improvement.

Each student receives a copy of *The Official SAT Study Guide*.

College Essay Workshop

Grades 9-12

Explore how different colleges use application essays, how to write effective essays, and how to use essays to differentiate and position college applications.

The course is taught as a seminar. Students present their college admission goals and positioning strategies, brainstorm essay topics and approaches, and write, discuss, and revise admissions essays.

ENGINEERING

FairfaxCollegiate.com/engineering

Design, manufacture, assemble, test, and think like an engineer.

Engineers are the makers of the modern world. From molecules to machines to skyscrapers, there's a team of engineers behind it.

Each Fairfax Collegiate engineering course connects to one or more of the four primary disciplines of engineering: mechanical, electrical, chemical, and civil.

Structural Engineering
Grades 3-4

Design and construct buildings, towers, bridges, and dams.

Projects center on construction materials, structural integrity, safety testing, disaster mitigation, blueprints, and ancient and modern civil engineering.

Space Engineering
Grades 3-4

Explore astronomy and space travel by performing science experiments, completing hands-on projects, and running computer simulations.

Students investigate space suits, rocketry, the phases of the moon, telescopes, rovers, and zero-gravity equipment. They build model spacecraft, simulate space missions, invent constellations, and find stars in virtual planetarium.

Vehicle Engineering
Grades 5-6

Get up to speed on vehicle engineering by designing cars, trucks, and boats.

Topics include components of cars, gearboxes, air resistance, and manufacturing planning.

Activities include a model car race, a sailboat race, testing designs for brakes and tires, and crash testing. For a final project, each student assembles a working, autonomous RC car.

Power Engineering
Grades 5-6

Turn on to electricity, power plants, green energy, and the power grid.

Students learn about voltage, current, resistance, electricity generation, transmission, and the uses of electric power.

Projects include constructing wind turbines, making batteries, building with solar panels, and creating a small-scale "circuit town."

Military Engineering
Grades 5-6

Explore physics and engineering in a historical context by building models of medieval siege engines.

Students construct and operate classroom-safe miniature catapults, ballistae, onagers, trebuchets, and other ancient artillery engines. They learn the application of geometry and physics in their designs. For a final project, students participate in launch-distance competitions.

Lessons include engineering topics such as simple machines, tension, torque, two-dimensional kinematics, and the design process, as well as historical information about the invention of siege engines.

Biomedical Engineering
Grades 7-9

Envision and prototype new medical equipment, prostheses, and artificial organs using 3D printing, computer simulations, and traditional modeling.

Topics include biochemistry, cell physiology, cell cycles, cell division, DNA structure and synthesis, protein synthesis, gene expression, tissue structure, human anatomy, and genetic engineering.

Aerospace Engineering
Grades 7-9

Launch into mechanical engineering and the design of aircraft, rockets, and spacecraft.

Topics include the physics of flight, aircraft design, jet propulsion, rocketry, satellites, and human spaceflight.

Projects include wind tunnel testing of airfoils, aircraft model building, model rocketry using household materials, creating an atmospheric data station, and tracking the path of the International Space Station.

TECHNOLOGY

Apply STEM principles to emerging and futuristic platforms.

Students think like a scientist or engineer as they progress from exploring the basics of a new technology to learning how to program it to perform more detailed tasks.

Courses are hands-on and will challenge both beginners and experienced students.

Intro to Robotics
Grades 3-4

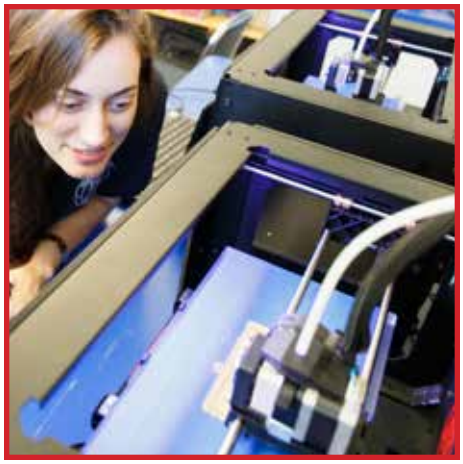
Build and program LEGO Mindstorms EV3 robots.

Projects include building a trash collecting robot, a robotic arm, and a robot that navigates mazes. The spotlight skill for the course is elementary programming using the EV3 graphical environment.

Robotics Zoo
Grades 3-4

Build LEGO EV3 Mindstorms robots that mimic the appearance and behavior of animals.

Projects include building toads, grasshoppers, polar bears, komodo dragons, and other animals. The spotlight skill for the course is building and modifying unusual designs.



Mobile Robotics
Grades 5-6

Build and program LEGO Mindstorms EV3 robots using all of the standard sensors and motors.

Projects include following a line, detecting walls, and remote control navigation. The spotlight skill for the course is using sensor data to change what the robot does.

Robotics Olympiad
Grades 5-6

Build and program LEGO Mindstorms EV3 robots, and engage in friendly competitive challenges.

Activities include soccer, go kart racing, and maze navigation. The spotlight skill for the course is optimizing robots to create competitive advantages.

Intro to 3D Printing
Grades 5-6

Design 3D objects, and bring them to life on a 3D printer.

Students set up, operate, and troubleshoot printers. They also use computer-assisted design software to create digital models for printing.

Lessons highlight commercial and industrial applications of 3D printing and different 3D printing materials. Students create objects around themes, such as cities, puzzles, or fantasy objects.

Over the two weeks, each student prints 6 to 8 small objects.

Intro to Drones
Grades 5-6

Fly different types of drones, and learn about modern drone technology.

After safety training, students complete activities about obstacle courses, aerial cinematography, and surveillance.

Lesson topics include components of drones, physics of flight, and ethical considerations of technology.

3D Printing
Grades 7-9

Design and print 3D objects.

Students set up, use, and troubleshoot printers, and create digital models for printing using computer-assisted design software.

Lessons explore different printing materials and diverse applications of 3D printers. Activities focus on creating objects around a certain theme each day, such as cities, puzzles, or fantasy objects.

Students take home approximately 6-8 small objects throughout the course.

Drones
Grades 7-9

Fly, program, and learn about drones.

After flight instruction and safety training, students participate in obstacle courses, search and rescue simulations, a team-based engineering challenge, and more. Prior experience with programming is not required.

Robotics Combat
Grades 7-9

Design, build, and program LEGO Mindstorms EV3 robots to compete in daily head-to-head battles.

Projects include jousting, a grenade drop battle, and sumo wrestling. The spotlight skill for the course is optimizing robot designs to gain an advantage.

Virtual Reality
Grades 7-9

Navigate and create virtual reality (VR) environments.

Students use VR to visit world landmarks, rocket through space, traverse the ocean floor, and go inside a human cell. In the second week, students use the Unity software platform to program VR games and build 3D worlds.

COMPUTER SCIENCE

FairfaxCollegiate.com/computer-science

Experience computer programming as an in-person social activity.

Courses are project-based and are appropriate for beginners as well as students with programming experience.

Instructors work directly with small groups of students to help them master concepts and complete their projects.

Many courses incorporate hardware as well as software.

Scratch Programming
Grades 3-4

Have fun writing programs with Scratch, a programming tool for children.

Students use graphical blocks to define program logic and control graphics, photos, and sounds.

Projects include creating a variety of interactive stories, games, and animations.

Intro to Mobile Development
Grades 5-6

Write games for tablets and smartphones using App Inventor, a graphical programming tool.

Projects include reaction, memory, and painting games. Fairfax Collegiate provides Android tablets for students' use.

Intro to Programming
Grades 5-6

Learn Python, the leading language for computer science instruction.

The course provides a comprehensive introduction to the key features of Python at a measured pace which is comfortable for a broad range of students.

For the final project, students write their own Python games.

Intro to Web Development
Grades 5-6

Explore JavaScript by writing games that run in web browsers such as Google Chrome.

Students discuss examples of browser games, sketch designs for the games they wish to create, use HTML and CSS to create the user interfaces for their games, and learn how to select and modify HTML elements using JavaScript.

Raspberry Pi Projects
Grades 5-6

Learn about electronics and programming with Raspberry Pi, a tiny computer.

Projects include building a video game controller, creating a security camera, plotting a virtual city map, programming a "flying birds" game, and installing and using a Linux distribution.

Programming
Grades 7-9

Learn Python, and prepare for high school Python-based courses.

Topics include Python language syntax, the fundamental data structures, organizing Python programs using functions, classes, and modules, and reading and writing text files.

Projects include utilities and games.

Web Development
Grades 7-9

Discover JavaScript, the programming language that runs in web browsers and powers modern web apps.

Students learn about variables, math operators, if/then statements, loops, functions, and arrays. Next, students learn how to interact with web pages using JavaScript, and how to use the development tools packaged in leading web browsers.

In the second week, students use JavaScript to create their own web apps and browser-based games.

Mobile Development
Grades 7-9

Write Android smartphone and tablet apps using the Thunkable app builder.

Projects explore touchscreen input, high resolution displays, accelerometers, location services, Bluetooth, barcode scanning, and cameras.

Fairfax Collegiate provides Android tablets for students' use.

Intro to Computer Science
Grades 9-12

Learn the Java programming language, and prepare for high school computer science courses.

The course builds from beginning topics such as keywords, variables, conditionals, and loops to advanced topics such as object-oriented programming, polymorphism, and Java GUI programming.

Exercises include console and GUI utilities, sorting algorithms, simple games, and other student projects.

Algorithms with Python
Grades 9-12

Take a hands-on tour of concepts at the core of high school computer science and beyond.

Students program algorithms for building, maintaining, searching, and sorting data structures.

Projects use the Python programming language.

Python Picante

Accelerated • Online • Interactive

Kids can be great programmers.

Programming, like music, is a domain open to prodigies. To learn and excel all you need are a computer, an internet connection, the ability to reason, and a lot of grit.

When you start, it helps if you have a guide. That's where Python Picante from Fairfax Collegiate comes in. We'll help you learn the basics and then how to teach yourself independently. You'll become a fluent programmer–one of the elect who can express themself with code.

Why Python? Python is efficient, easy to read, easy to debug, runs on all operating systems, and is available for free. Python is the most popular language for high school and college computer science courses, and is used widely in business, science, and government.

Our Python Picante courses start with the basics. When you're ready, move on to advanced courses to learn how to write games, work with data, and create web applications. All courses are taught online over Zoom by skilled Pythonistas who connect with kids.

Basic Python I

Learn the basics of Python starting from zero knowledge of programming.

Topics include variables, strings, numbers, comments, if statements, lists, dictionaries, user input, and while loops.

Basic Python II

Continue your introduction to Python after Basic Python I.

Topics include functions, classes, files, exceptions, debugging, unit testing, code editors and source control.

Accelerated Python

Learn what's covered in Basic Python I and Basic Python II in half the time.

Topics include variables, strings, numbers, comments, if statements, lists, dictionaries, user input, while Loops, functions, classes, files, exceptions, debugging, unit testing, code editors, and source control.

Python Games

Write your own games in Python with the PyGames library.

Students examine, modify, and extend a game written using the PyGames library. Then they write their own games.

Python Data Visualization

Use Python to download, analyze, and plot data.

Student work through data visualization examples using Matplotlib, Plotly, CVS files, JSON, and Web API's. Then they create their own data visualizations.

Python Web Applications

Write and deploy web applications using Python, Django, and Heroku.

Students explore Django by constructing an example web application, styling it with Bootstrap, and deploying it on Heroku. Next, they create their own web applications.

FairfaxCollegiate.com/python

FILM, PHOTO, AND DESIGN

FairfaxCollegiate.com/film-photo-design

Develop the technical and artistic skills to make films, photos, and designs that tell stories and create emotion.

Learn about computer graphics, design your dream house, create sophisticated web pages, pioneer new forms of digital journalism, or master photography with DSLR cameras. The only limit is your imagination!

Filmmaking

Grades 3-4 & Grades 5-6

Work with peers, and start telling stories with video.

Students brainstorm ideas for a short film, write original scripts, and create shot lists and storyboards.

Students shoot their films using tripods, advanced video cameras, boom microphones, costumes, and props.

Students edit films, add music and credits, and export films to a private Vimeo account for home viewing.

Digital Design

Grades 3-4

Create art in digital media including photography, illustration, music, and computer games.

Design topics include composition, exposure, colors, contrast, and vector and raster images.

Activities include photography, image editing, digital illustration, digital music creation, and game design exercises.

Graphic Design

Grades 5-6

Apply balance, contrast, negative space, grids, color theory, and typography to design banners, signs, menus, advertisements, and posters using paper, ink, collages, and computer software.

Design topics include negative space, grouping, alignment, emphasis, grids, color theory, and typography.

Projects include store signs, menus, banners, posters, and advertisements.

Intro to Photography

Grades 5-6

Visualize and then create images with cameras, lenses, natural and artificial light, and editing software.

Topics include photographic genres, composition, camera operation, lenses, exposure, and basic image editing.

Projects include architectural photography, landscapes, portraits, macro photography, nature photography, and product photography.

Photography

Grades 7-9

Use cameras, lenses, light, and editing software to create images that express your artistic vision.

Exercises emphasize exposure, composition, color, lighting, and achieving artistic effects through the control of aperture, shutter speed, and ISO.

Subjects include plants and flowers, food, portraits, products, sports and action, and architecture.

As a final project, students assemble a portfolio of their best photos.

Video Production

Grades 7-9

Write, direct, act in, and edit short films that achieve high production values through camera and audio technique, costumes, props, and special effects.

Exercises cover acting, script writing, storyboarding, location scouting, camera operation, lighting, and sound.

Students produce two short films using tripods, video cameras, boom microphones, costumes, props, and lights.

Social Media Video

Grades 7-9

Think like a social media creator and develop and produce videos that your audience will find, watch, respond to, and recommend.

Production concepts include location scouting, interviewing, B-roll footage, green screen effects, adding pictures and screenshots, and multicam setups.

Production equipment includes DSLR cameras, simple lighting kits and on-camera lights, audio recorders, and stick, shotgun, and lavaliere microphones. Students use Blackmagic DaVinci Resolve to edit and optionally upload videos to personal Vimeo, YouTube, Facebook, and Twitter accounts.

Web Design

Grades 7-9

Practice design concepts such as balance, contrast, negative space, typography and user interface engineering, and use HTML, CSS, and frameworks to design web pages.

Create single-page design projects and practice universal design principles.

Design topics include negative space, grouping, alignment, emphasis, grids, color theory, and typography.

Projects include store signs, menus, banners, posters, and advertisements.

GAMING

Explore how organized gaming leagues are taking hold in schools around the world.

High schools and colleges have begun to recognize organized video gaming alongside traditional athletics and student clubs due to their ability to foster social growth.

Through playing games, we give students the opportunity to hone their logical and strategic thinking skills as well as helping them practice good sportsmanship and teamwork.

Minecraft Modding

Grades 3-4

Customize and extend Minecraft.

Students use MCreator to design, build, and test Minecraft mods. Students customize blocks, items, creatures, environments, achievements, triggers, and events.

As a final project, students design and code their own fully functional Minecraft mods, and export them to use at home with Minecraft Forge.

Intro to Esports

Grades 5-6

Use competitive video games to develop good sportsmanship, respect, inclusion, and setting and working towards goals.

Students learn about different components of a computer and examine how they are assembled, while learning to play Super Smash Bros Ultimate (ESRB Rating: Everyone 10+).

Students then use the PCs to play Rocket League (ESRB Rating: Everyone) and learn the advantages of creative and strategic thinking.

Strategy Gaming

Grades 5-6

Develop your strategic thinking and teamwork skills.

Gaming PCs are networked together for a social experience that the whole class can participate in.

Students are challenged to simultaneously formulate short-term and long-term tactical decisions in the historical strategy game Civilization 6, and then put these skills to the test again in the science-fiction simulation Endless Space 2.

Both games have an ESRB rating of Everyone 10+.

Minecraft and Python

Grades 5-6

Learn Python programming by writing scripts to enhance Minecraft.

Programming topics include variables, types, conditional statements, loops, collections, and algorithms.

Students write Python programs to generate massive structures and cities inside of Minecraft. The second week they create customized Minecraft minigames.

Esports Arena

Grades 7-9

Build advanced gaming PCs, and take on the role of esports athletes.

The course begins with a unit on PC gaming technology. Each student assembles a full-fledged gaming PC using parts provided by Fairfax Collegiate.

Instructors teach students the rules, tactics, and strategy of each game. Students compete in teams and practice leadership and team skills.

The games used in the course are League of Legends (ESRB Rating: Teen) and Rocket League (ESRB Rating: Everyone).

Esports League

Grades 7-9

Participate in a summer e-sports league, and learn why schools are starting to offer them alongside traditional sports.

Students explore why the comparison with traditional sports makes sense and how they can talk to their school's faculty about considering an e-sports program. Students broadcast and commentate on e-sports matches.

Students also develop teamwork and strategic skills through playing popular e-sports games: League of Legends (ESRB Rating: Teen) and Rocket League (ESRB Rating: Everyone).

Flight School

Grades 7-9

Learn how to fly aircraft with a realistic simulator used by professional pilots.

Class activities include basic and advanced flight maneuvers, recreating historic flight scenarios, and learning about different types of aircraft.

Students use Microsoft Flight Simulator (ESRB Rating: Everyone).

CHANTILLY AND DULLES SCHEDULES

Chantilly: St. Timothy Catholic School, 13809 Poplar Tree Rd., Chantilly, VA, 20151

Session II: Jun 27-Jul 8

Morning
Writing US Geography 3-4
Space Engineering 3-4
Advanced Math 5-6
Intro to Web Development 5-6
Human Bio and Anatomy 5-6
Writing the Constitution 7-9
Programming 7-9
Medical Science 7-9
SAT Prep 9-12

Afternoon
Fairfax Collegiate Math 3-4
Chemistry Concepts 3-4
Creative Writing 5-6
Elementary Debate 5-6
Mobile Robotics 5-6
Math for Middle School 6-8
Aerospace Engineering 7-9
Virtual Reality 7-9
Intro to Calculus 9-12

Session III: Jul 11-Jul 22

Morning
Math Games 3-4
Hands-On Science 3-4
Writing US Presidents 5-6
Forensic Science 5-6
Minecraft and Python 5-6
Writing for High School 7-9
TJ Admissions Prep 7-8
Influencer Video 7-9
Intro to Algebra II 9-12

Afternoon
Reading Reinforcement 3-4
Minecraft Modding 3-4
Fairfax Collegiate Math 5-6
Vehicle Engineering 5-6
Filmmaking 5-6
Advanced Algebra Topics 7-9
Forensic Science 7-9
PSAT Prep 7-9
Academic Writing 9-12

Session IV: Jul 25-Aug 5

Morning
Writing Fundamentals 3-4
Spy Science 3-4
Problem Solving 5-6
Speech 5-6
Raspberry Pi Projects 5-6
Intro to Geometry 7-9
Middle School Debate 7-9
Drones 7-9
SAT Prep 9-12

Afternoon
Math Workshop 3-4
Persuasive Speaking 3-4
Strategic Reading 5-6
Spy Science 5-6
Intro to Drones 5-6
Reading for Meaning 7-9
Web Development 7-9
Medical Science 7-9
College Essay Workshop 9-12

Dulles: St. Veronica Catholic School, 3460-B Centreville Rd., Chantilly, VA 20151

Session I: Jun 13-Jun 24

Morning
Writing US Geography 3-4
Hands-On Science 3-4
Fairfax Collegiate Math 5-6
Intro to Programming 5-6
Intro to Photography 5-6
Writing the Constitution 7-9
Medical Science 7-9
Biomedical Engineering 7-9
Esports Arena 7-9

Afternoon
Advanced Math 3-4
Intro to Robotics 3-4
Writing Skills and Grammar 5-6
Chem Workshop 5-6
Intro to Esports 5-6
Intro to Algebra 7-9
Middle School Debate 7-9
Photography 7-9
3D Printing 7-9

Session II: Jun 27-Jul 8

Morning
Story Writing 3-4
Persuasive Speaking 3-4
Problem Solving 5-6
Spy Science 5-6
Strategy Gaming 5-6
Reading for Meaning 7-9
Mobile Development 7-9
Animal Physiology 7-9
TJ Admissions Prep 7-8

Afternoon
Math Games 3-4
Spy Science 3-4
Strategic Reading 5-6
Speech 5-6
Intro to Mobile Development 5-6
Intro to Geometry 7-9
Mock Trial 7-9
PSAT Prep 7-9
Flight School 7-9

Session III: Jul 11-Jul 22

Morning
Fairfax Collegiate Math 3-4
Chemistry Concepts 3-4
Creative Writing 5-6
Intro to 3D Printing 5-6
Robotics Olympiad 5-6
Intro to Algebra 7-9
Model UN 7-9
Video Production 7-9
Esports League 7-9

Afternoon
Writing US Geography 3-4
Scratch Programming 3-4
Advanced Math 5-6
Chem Workshop 5-6
Filmmaking 5-6
Writers' Workshop 7-9
Web Development 7-9
Neuroscience 7-9
Biomedical Engineering 7-9

Session IV: Jul 25-Aug 5

Morning
Story Writing 3-4
Hands-On Science 3-4
Fairfax Collegiate Math 5-6
Forensic Science 5-6
Mobile Robotics 5-6
Math for Middle School 6-8
TJ Admissions Prep 7-8
Influencer Video 7-9
Esports Arena 7-9

Afternoon
Advanced Math 3-4
Intro to Filmmaking 3-4
Writing Skills and Grammar 5-6
Power Engineering 5-6
Intro to Esports 5-6
Writing for High School 7-9
Programming 7-9
Forensic Science 7-9
Robotics Combat 7-9

Visit **www.FairfaxCollegiate.com** for additional information about each course, including a detailed syllabus and a schedule of available sessions and locations for a given course.

MCLEAN AND TYSONS SCHEDULES

McLean: Redeemer Lutheran Church, 1545 Chain Bridge Rd., McLean, VA 22101

Session II: Jun 27-Jul 8

Morning
Advanced Math 5-6
Leadership 5-6
Robotics Olympiad 5-6
Writing for High School 7-9
Programming 7-9
Animal Physiology 7-9
Intro to Algebra II 9-12
SAT Prep 9-12

Afternoon
Creative Writing 5-6
Chem Workshop 5-6
Power Engineering 5-6
Intro to Algebra 7-9
Model UN 7-9
Photography 7-9
Intro to Computer Science 9-12
College Essay Workshop 9-12

Session III: Jul 11-Jul 22

Morning
Writing Skills and Grammar 5-6
Human Bio and Anatomy 5-6
Intro to 3D Printing 5-6
Math for Middle School 6-8
Mock Trial 7-9
Neuroscience 7-9
Academic Writing 9-12
Algorithms with Python 9-12

Afternoon
Fairfax Collegiate Math 5-6
Elementary Debate 5-6
Raspberry Pi Projects 5-6
Writers' Workshop 7-9
Mobile Development 7-9
Biomedical Engineering 7-9
Intro to Precalculus 9-12
High School Debate 9-12

Session IV: Jul 25-Aug 5

Morning
Advanced Math 5-6
Forensic Science 5-6
Robotics Olympiad 5-6
Writing the Constitution 7-9
Middle School Debate 7-9
Web Development 7-9
Intro to Calculus 9-12
Intro to Computer Science 9-12

Afternoon
Strategic Reading 5-6
Intro to Programming 5-6
Vehicle Engineering 5-6
Intro to Geometry 7-9
Forensic Science 7-9
Virtual Reality 7-9
High School Debate 9-12
SAT Prep 9-12

Session V: Aug 8-Aug 19

Morning
Writing Fundamentals 3-4
Minecraft Modding 3-4
Fairfax Collegiate Math 5-6
Spy Science 5-6
Elementary Debate 5-6
Intro to Algebra 7-9
TJ Admissions Prep 7-8
Aerospace Engineering 7-9

Afternoon
Fairfax Collegiate Math 3-4
Spy Science 3-4
Writing Skills and Grammar 5-6
Military Engineering 5-6
Minecraft and Python 5-6
Writing for High School 7-9
Animal Physiology 7-9
PSAT Prep 7-9

Tysons: BASIS Independent McLean, 8000 Jones Branch Dr., McLean, VA 22102

Session I: Jun 13-Jun 24

Morning
Fairfax Collegiate Math 3-4
Public Speaking 3-4
Intro to Filmmaking 3-4
Minecraft Modding 3-4
Creative Writing 5-6
Spy Science 5-6
Vehicle Engineering 5-6
Mobile Robotics 5-6
Intro to Algebra 7-9
Mock Trial 7-9
Programming 7-9
TJ Admissions Prep 7-8

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Reading Reinforcement 3-4
Spy Science 3-4
Structural Engineering 3-4
Fairfax Collegiate Math 5-6
Elementary Debate 5-6
Filmmaking 5-6
Minecraft and Python 5-6
Writers' Workshop 7-9
Neuroscience 7-9
PSAT Prep 7-9
Aerospace Engineering 7-9
Esports Arena 7-9

Session II: Jun 27-Jul 8

Morning
Writing US Geography 3-4
Persuasive Speaking 3-4
Hands-On Science 3-4
Space Engineering 3-4
Advanced Math 5-6
Raspberry Pi Projects 5-6
Filmmaking 5-6
Intro to Esports 5-6
Math for Middle School 6-8
Biomedical Engineering 7-9
Web Design 7-9
Robotics Combat 7-9

Afternoon
Math Games 3-4
Scratch Programming 3-4
Robotics Zoo 3-4
Writing US Presidents 5-6
Speech 5-6
Human Bio and Anatomy 5-6
Military Engineering 5-6
Reading for Meaning 7-9
Medical Science 7-9
Influencer Video 7-9
3D Printing 7-9
Esports League 7-9

Session III: Jul 11-Jul 22

Morning
Fairfax Collegiate Math 3-4
Spy Science 3-4
Intro to Robotics 3-4
Minecraft Modding 3-4
Writing for Middle School 5-6
Forensic Science 5-6
Intro to Photography 5-6
Strategy Gaming 5-6
Intro to Geometry 7-9
Middle School Debate 7-9
Programming 7-9
Video Production 7-9

Afternoon
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Problem Solving 5-6
Intro to Programming 5-6
Power Engineering 5-6
Robotics Olympiad 5-6
Writing for High School 7-9
Web Development 7-9
Forensic Science 7-9
Photography 7-9
Flight School 7-9

Session IV: Jul 25-Aug 5

Morning
Story Writing 3-4
Space Engineering 3-4
Digital Design 3-4
Robotics Zoo 3-4
Fairfax Collegiate Math 5-6
Elementary Debate 5-6
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Filmmaking 5-6
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TJ Admissions Prep 7-8
Web Design 7-9

Afternoon
Math Workshop 3-4
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Intro to Filmmaking 3-4
Writing US Presidents 5-6
Human Bio and Anatomy 5-6
Graphic Design 5-6
Mobile Robotics 5-6
Writing the Constitution 7-9
Model UN 7-9
Aerospace Engineering 7-9
Robotics Combat 7-9
Esports Arena 7-9

RESTON AND VIENNA SCHEDULES

Reston[D‡]: Northern Virginia Hebrew Congregation, 1441 Wiehle Ave., Reston, VA 20190

Session II: Jun 27-Jul 8

Morning
Writing Fundamentals 3-4
Structural Engineering 3-4
Fairfax Collegiate Math 5-6
Intro to Mobile Development 5-6
Military Engineering 5-6
Writing for High School 7-9
Middle School Debate 7-9
Forensic Science 7-9
Robotics Combat 7-9
Intro to Precalculus 9-12

Afternoon
Advanced Math 3-4
Chemistry Concepts 3-4
Minecraft Modding 3-4
Writing Skills and Grammar 5-6
Elementary Debate 5-6
Chem Workshop 5-6
Intro to Geometry 7-9
Mobile Development 7-9
Aerospace Engineering 7-9
High School Debate 9-12

Session III: Jul 11-Jul 22

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Vehicle Engineering 5-6
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Session IV: Jul 25-Aug 5

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Problem Solving 5-6
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Military Engineering 5-6
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Neuroscience 7-9
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Session V: Aug 8-Aug 19

Morning
Fairfax Collegiate Math 3-4
Persuasive Speaking 3-4
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Creative Writing 5-6
Forensic Science 5-6
Robotics Olympiad 5-6
Writers' Workshop 7-9
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Writing Fundamentals 3-4
Intro to Robotics 3-4
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Raspberry Pi Projects 5-6
Vehicle Engineering 5-6
Intro to Geometry 7-9
Middle School Debate 7-9
Forensic Science 7-9
PSAT Prep 7-9
SAT Prep 9-12

Vienna: Green Hedges School, 415 Windover Ave. NW, Vienna, VA 22180

Session I: Jun 13-Jun 24

Morning
Writing Fundamentals 3-4
Scratch Programming 3-4
Chemistry Concepts 3-4
Problem Solving 5-6
Leadership 5-6
Forensic Science 5-6
Writing for High School 7-9
Web Development 7-9

Afternoon
Math Games 3-4
Persuasive Speaking 3-4
Robotics Zoo 3-4
Strategic Reading 5-6
Raspberry Pi Projects 5-6
Military Engineering 5-6
Intro to Geometry 7-9
Forensic Science 7-9

Session II: Jun 27-Jul 8

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Fairfax Collegiate Math 3-4
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Spy Science 3-4
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Filmmaking 5-6
Minecraft and Python 5-6
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Middle School Debate 7-9

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Human Bio and Anatomy 5-6
Minecraft and Python 5-6
Writers' Workshop 7-9
Video Production 7-9

[D]Dietary Restrictions at this facility. Please do not bring meat or shell fish. Lunches may include dairy products and tuna fish.
[‡]Indoor break location. The supervised twenty-minute morning and afternoon breaks are indoors at this facility.

ASHBURN AND SOUTH RIDING SCHEDULES

Ashburn: Loudoun School for Advanced Studies, 20577 Ashburn Rd., Ashburn, VA 20147

Session II: Jun 27-Jul 8

Morning
Writing Fundamentals 3-4
Hands-On Science 3-4
Digital Design 3-4
Problem Solving 5-6
Forensic Science 5-6
Intro to Esports 5-6
Intro to Geometry 7-9
Middle School Debate 7-9
Video Production 7-9
Web Design 7-9
Academic Writing 9-12

Afternoon
Fairfax Collegiate Math 3-4
Public Speaking 3-4
Intro to Filmmaking 3-4
Writing Skills and Grammar 5-6
Power Engineering 5-6
Graphic Design 5-6
Writers' Workshop 7-9
Forensic Science 7-9
Academies of Loudoun Prep 7-8
Esports Arena 7-9
Intro to Computer Science 9-12

Session III: Jul 11-Jul 22

Morning
Math Games 3-4
Space Engineering 3-4
Robotics Zoo 3-4
Strategic Reading 5-6
Chem Workshop 5-6
Filmmaking 5-6
Intro to Algebra 7-9
Mobile Development 7-9
TJ Admissions Prep 7-8
Robotics Combat 7-9
SAT Prep 9-12

Afternoon
Story Writing 3-4
Scratch Programming 3-4
Chemistry Concepts 3-4
Fairfax Collegiate Math 5-6
Military Engineering 5-6
Mobile Robotics 5-6
Writing for High School 7-9
Medical Science 7-9
PSAT Prep 7-9
Esports League 7-9
Intro to Algebra II 9-12

Session IV: Jul 25-Aug 5

Morning
Writing Fundamentals 3-4
Public Speaking 3-4
Minecraft Modding 3-4
Advanced Math 5-6
Spy Science 5-6
Strategy Gaming 5-6
Reading for Meaning 7-9
Programming 7-9
Animal Physiology 7-9
Photography 7-9
Intro to Precalulus 9-12

Afternoon
Advanced Math 3-4
Spy Science 3-4
Intro to Filmmaking 3-4
Writing for Middle School 5-6
Intro to Photography 5-6
Minecraft and Python 5-6
Intro to Geometry 7-9
Model UN 7-9
Academies of Loudoun Prep 7-8
Flight School 7-9
Algorithms with Python 9-12

Session V: Aug 8-Aug 19

Morning
Fairfax Collegiate Math 3-4
Scratch Programming 3-4
Hands-On Science 3-4
Writing Skills and Grammar 5-6
Chem Workshop 5-6
Intro to Drones 5-6
Intro to Algebra 7-9
Middle School Debate 7-9
Biomedical Engineering 7-9
Esports Arena 7-9
SAT Prep 9-12

Afternoon
Reading Reinforcement 3-4
Space Engineering 3-4
Robotics Zoo 3-4
Fairfax Collegiate Math 5-6
Intro to 3D Printing 5-6
Intro to Esports 5-6
Writing for High School 7-9
Neuroscience 7-9
Academies of Loudoun Prep 7-8
Drones 7-9
College Essay Workshop 9-12

South Riding: St. Paul VI Catholic High School, 42341 Braddock Rd., Chantilly, VA 20152

Session II: Jun 27-Jul 8

Morning
Reading Reinforcement 3-4
Hands-On Science 3-4
Fairfax Collegiate Math 5-6
Intro to Programming 5-6
Forensic Science 5-6
Intro to Algebra 7-9
Video Production 7-9
Drones 7-9
Academic Writing 9-12

Afternoon
Math Workshop 3-4
Structural Engineering 3-4
Writing for Middle School 5-6
Filmmaking 5-6
Intro to Drones 5-6
Writers' Workshop 7-9
Web Development 7-9
Forensic Science 7-9
Intro to Algebra II 9-12

Session III: Jul 11-Jul 22

Morning
Advanced Math 3-4
Digital Design 3-4
Writing Skills and Grammar 5-6
Spy Science 5-6
Intro to Web Development 5-6
Reading for Meaning 7-9
Mock Trial 7-9
Animal Physiology 7-9
SAT Prep 9-12

Afternoon
Writing Fundamentals 3-4
Persuasive Speaking 3-4
Spy Science 3-4
Problem Solving 5-6
Leadership 5-6
Intro to Geometry 7-9
Programming 7-9
Academies of Loudoun Prep 7-8
Intro to Computer Science 9-12

Session IV: Jul 25-Aug 5

Morning
Fairfax Collegiate Math 3-4
Space Engineering 3-4
Creative Writing 5-6
Elementary Debate 5-6
Intro to Mobile Development 5-6
Intro to Algebra 7-9
Video Production 7-9
3D Printing 7-9
SAT Prep 9-12

Afternoon
Writing US Geography 3-4
Intro to Filmmaking 3-4
Advanced Math 5-6
Chem Workshop 5-6
Intro to 3D Printing 5-6
Writers' Workshop 7-9
Mobile Development 7-9
Academies of Loudoun Prep 7-8
Intro to Algebra II 9-12

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St. Veronica Catholic School
3460-B Centreville Rd.

McLean
Lutheran Church of the Redeemer
1545 Chain Bridge Rd.

Reston
Northern Virginia Hebrew Congregation
1441 Wiehle Ave.

South Riding
St. Paul VI Catholic High School
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