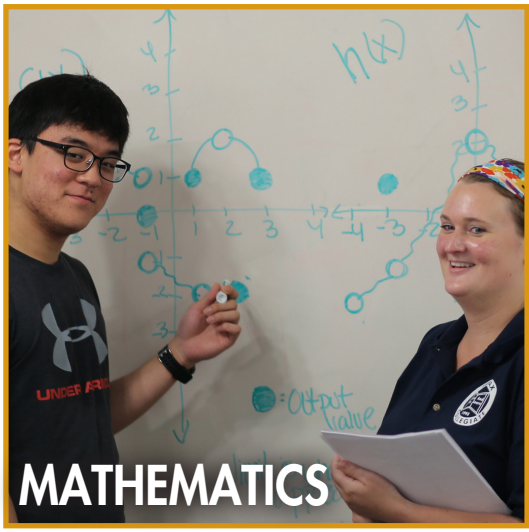
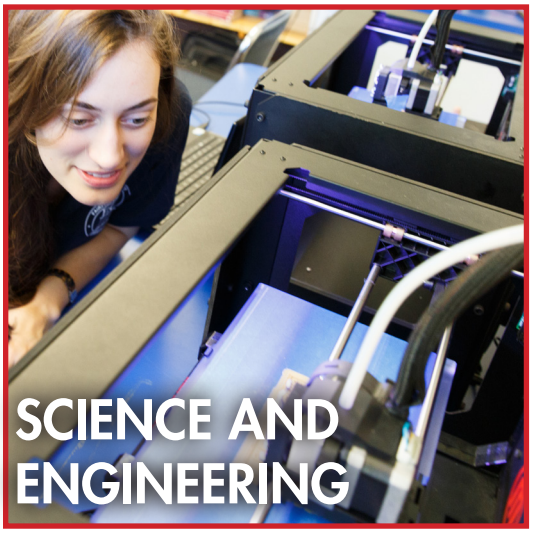
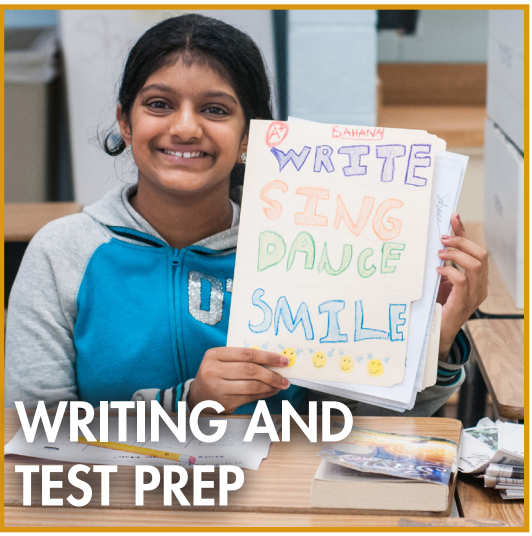
FAIRFAX COLLEGIATE
Have Fun And Learn
1993

2023 SUMMER

FOR RISING GRADES 3-12







IN-PERSON AND ONLINE

FAIRFAX COLLEGIATE SUMMER 2023

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 2023 IN-PERSON 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-Edlin Campus
Edlin School
10742 Sunset Hills Rd.

Reston-NVHC 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

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PROGRAM OVERVIEW

SUMMER 2023 SESSIONS AND HOURS

Session	Start Date	End Date	Duration	In-Person Half Day	In-Person Full Day	Online Half Day	Online Full Day
Session 1	June 19	June 30	10 days	$550	$865	$315	$525
Session 2	July 3	July 14	9 days*	$500	$785	$285	$475
Session 3	July 17	July 28	10 days	$550	$865	$315	$525
Session 4	July 31	August 11	10 days	$550	$865	$315	$525
Session 5	August 14	August 18	5 days**	$290	$460	$160	$265

*No class July 4

**Session 5 is one week long, rather than two.

Hours	In-Person	Online
Morning Classes	8:30 AM to 12:00 PM	10:00 AM to 12:00 PM
Afternoon Classes	12:30 PM to 4:00 PM	1:00 PM to 3:00 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

Register and pay in full by April 1 to save 5%

SUMMER PROGRAM REGISTRATION

Online Registration

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

Grade Levels and Placement

Course grade levels are *rising grade levels*, the grade levels students will enter in the fall of 2023. 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 early May. 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 **fairfaxcollegiate.com/summer/participation-terms**

QR Codes

The QR codes in this catalog link to the main subject and location pages on **fairfaxcollegiate.com**, which in turn link to individual pages for each course. These course pages contain a more detailed course description, a day-by-day syllabus, and the summer schedule for the course.

Start Here

The program overview is at **fairfaxcollegiate.com/summer**

WRITING

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

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

Writing Fundamentals
Grades 3-4

Learn to write varied, grammatically correct sentences, and build a solid foundation for writing paragraphs.

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

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.

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, explore components of an effective story, and workshop their stories in class. Topics include compelling characters, memorable settings, plot outlines, and point-of-view.

Writing U.S. Geography
Grades 3-4

Learn and write about the physical, political, demographic, and economic geography of the United States.

Students practice writing clear sentences, paragraphs, and multi-paragraph compositions.

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.

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 comprehension tools including looking for cause and effect, outlining, questioning, skimming, summarizing, and synthesizing.

Creative Writing
Grades 5-6

Write, share, discuss, and revise your own personal narratives, short stories, plays, and poems.

Students revise drafts of their works based on their instructor's written comments. Students may publish their works in a class anthology and enter their works into writing contests.

Writing for Middle School
Grades 5-6

Learn to write five-paragraph essays, the mainstay of writing across the middle school curriculum.

Students learn how to use thesis statements and supporting sentences to structure paragraphs, and then how to use paragraphs to structure essays.

Writing U.S. Presidents
Grades 5-6

Read about the U.S. Presidents, and write about historical events and the presidents' lives.

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

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, drafting, revising, and editing.

Reading for Meaning
Grades 7-9

Become a critical reader by reading opposing viewpoints about contemporary issues, practicing close reading, notetaking, and summarizing.

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

Genres include short stories, journalistic writing, essays, and poetry. 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 for High School
Grades 7-9

Become proficient at writing five-paragraph essays through developing sentence variety and practicing notetaking and outlining.

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

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 informative and complex 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.

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

College Essay Workshop
Grades 9-12

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

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

MATHEMATICS

Build confidence in the skills needed for prior or future school-year math courses.

Each course features a diagnostic test, daily one-on-one coaching, small group instruction, enrichment activities, and math games. At the end of the session, families receive a detailed post-test report.

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.

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.

Advanced Math 3-4

Grades 3-4

Use summer 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.

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.

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 public school 5th and 6th grade math topics, including fractions, decimals, integers, geometry, perimeter and area, statistics, ratios and proportions, and algebra.

Advanced Math 5-6

Grades 5-6

Use summer 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.

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.

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

Get ready for your first high-school-level math course: Algebra I.

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
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. Elementary and middle school science courses are built around hands-on labs, while high school courses prepare students for high school biology and chemistry courses.

Chemistry Concepts
Grades 3-4

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

Students work in small groups closely supervised by their instructors. Experiments are age-appropriate and use non-hazardous chemicals and supplies; examples include pH testing on basic substances and exploring properties of ooblek.

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.

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

Activities include 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.

Students model atoms, make casein glue, investigate fluid viscosity, simulate acid rain, refine invisible inks, and explore 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.

This course explores 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 also create life-sized posters of their organ systems.

Visit **fairfaxcollegiate.com** for course schedules, syllabi, and registration

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, human motor nerve signal measurement, and brain wave pattern observation and interpretation.

Medical Science
Grades 7-9

Investigate organ systems through dissection and phlebotomy simulations, and learn about causes and treatment of disease.

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

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

Intro to High School Bio
Grades 9-12

Prepare for your upcoming biology class with an overview of key topics.

Topics include cellular structure and function, biological transport, DNA, and genetics.

Presentations, quizzes, and frequent review help tie concepts together to give students a deeper understanding of how different biological processes are intertwined.

Intro to High School Chem
Grades 9-12

Prepare for your upcoming chemistry class with an overview of key topics.

Topics include atomic structure and bonding, chemical equations, states of matter, and solutions.

Lectures and problem sets challenge students to understand these new concepts and be prepared for the upcoming school year.

TJ AND ACADEMIES OF LOUDOUN PREP

fairfaxcollegiate.com/tj-acl-prep

Explore opportunities to attend local selective public high schools.

Courses guide students though everything they need to know about the admissions process, then help them build their confidence through practice tests, instruction in writing targeted essays, and personalized coaching and feedback.

Exploring TJ

Grades 6-7

Learn about TJ, and get set for high school success no matter what school you attend.

Students learn about the TJ admissions process one or more years before they apply.

Activities and discussions develop students' interests in a way that provides them with experience to draw on as they write personal statements for TJ's writing assessment. Students consider how they would use their time at TJ if they are admitted.

This course is not recommended for rising 8th graders who will apply to TJ in Fall 2023.

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.

Instructors support students in efficiently writing organized, informative, and grammatically correct essays under time constraints.

Students take two full-length practice tests, and receive a written evaluation.

TJ Personal Statements

Grades 7-8

This online-only course takes advantage of the virtual classroom and shorter duration.

Students focus on the personal statements portion of TJ Admissions Prep, but problem-solving essay questions will be covered briefly as well.

TJ Problem-Solving Essay

Grades 7-8

This online-only course takes advantage of the virtual classroom and shorter duration.

Students focus on the problem-solving essay portion of TJ Admissions Prep, but personal statements will be covered briefly as well.

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.

Students take two full-length practice tests, and receive a written evaluation.

SAT AND PSAT PREP

fairfaxcollegiate.com/sat-psat-prep

Prepare for the SAT and the PSAT through content review, individual coaching, test-taking strategies, and techniques for reducing anxiety.

Each course features a diagnostic test, small group instruction, and daily opportunities for practice. Families receive a report with final test scores, demonstrating progress and areas for improvement.

PSAT 8/9 Prep

Grades 7-9

Prepare for the PSAT 8/9, and get on track to meet your SAT and PSAT/NMSQT goals.

The PSAT 8/9, the College Board exam for 8th and 9th graders, shows what students need to work on to get ready for high school AP courses and for the SAT.

Students complete two official practice PSAT 8/9 tests and become familiar with question formats, test scoring, and time management. Instructors write evaluations with suggestions for improvement.

PSAT/NMSQT Prep

Grades 9-12

Prepare for the PSAT/NMSQT, the qualifying test for the National Merit Scholarship Program.

The math review covers algebraic expressions and equations, graphical representations, statistics, and strategies for the math 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 math 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.

SAT Basic Math

Grades 9-12

Review the math needed to succeed on the SAT.

The SAT math sections require students to have a solid background in several subjects. This course provides a review of these subjects before jumping into a full SAT Prep course.

Students review core concepts from Algebra 1, Geometry, and Algebra 2 most commonly seen on the SAT. Students get help from instructors and check their understanding with practice sets consisting of SAT questions.

SAT Verbal

Grades 9-12

Prepare in-depth for the reading and writing sections of the SAT.

In-Person: A fast-paced environment where extensive practice, review, and time management strategies will be the primary focus. Ideal for students who are trying to optimize their verbal section score.

Online: Designed to take advantage of the virtual classroom and shorter duration. Ideal for students who want to review reading and writing content and work through practice test questions at a moderate pace.

SAT Math

Grades 9-12

Prepare in-depth for the two math sections of the SAT.

In-Person: A fast-paced environment where extensive practice, review, and time management strategies will be the primary focus. Ideal for students who are trying to optimize their math section score.

Online: Designed to take advantage of the virtual classroom and shorter duration. Ideal for students who want to review math content and work through practice test questions at a moderate pace.

PUBLIC SPEAKING

fairfaxcollegiate.com/public-speaking

Build your confidence in public speaking, debating, persuading, and leading an audience.

Public speaking courses provide students with daily opportunities to improve their self-expression and communication skills by preparing and delivering speeches and arguments to peers.

Public Speaking
Grades 3-4

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

Students present daily speeches to the class under guidance from an instructor who helps improve the content and delivery of the speech.

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

Persuasive Speaking
Grades 3-4

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

Students learn how to form arguments, create a speech with them, and present that speech confidently.

This course also emphasizes attentive listening and respect for speakers.

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.

Students present speeches and incorporate feedback from their instructor regarding eye contact, body language, word choice, voice inflection, and more.

Students also develop research skills as they work on their final speech of the session.

Leadership
Grades 5-6

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

Students 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.

Through persuasion, negotiation, and considering feedback, students learn how to lead effectively.

Middle School Debate
Grades 7-9

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

Students learn public speaking skills as they craft arguments and rebuttals.

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

Model UN
Grades 7-9

Learn 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, debating, and writing skills.

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

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, civil and criminal trials, and standards of proof.

High School Debate
Grades 9-12

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

Students complete daily debate exercises and research to prepare for a competition-level final debate in the Public Forum format.

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

ENGINEERING

fairfaxcollegiate.com/engineering

Design, manufacture, assemble, test, and think like an engineer. Hands-on projects give students a chance to learn how things work and then redesign and build to the limits of their imagination.

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

Space Engineering
Grades 3-4

Explore astronomy and space travel through experiments, projects, and 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 a virtual planetarium.

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.

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.

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."

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 RC car.

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, and tracking the path of the International Space Station.

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.

COMPUTER SCIENCE

fairfaxcollegiate.com/computer-science

Learn computer programming as a social activity, taught by instructors selected for both teaching skills and mastery of computer science.

Courses are project-based, available in multiple programming languages, and suitable for beginners as well as students with prior experience. Several courses incorporate hardware as well as software.

Scratch Programming
Grades 3-4

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

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 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 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.

Raspberry Pi Projects
Grades 5-6

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

Projects include building game controllers, creating security cameras, plotting virtual city maps, programming "flying birds" games, and exploring Linux.

Python 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.

Java Programming
Grades 7-9

Learn Java and prepare for high school Java-based courses.

The course combines classroom instruction and practice projects. Students explore fundamental data structures including strings, arrays, lists, and maps. They also learn about Java classes and object-oriented programming.

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 create games and web-apps with JavaScript.

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

Explore Java concepts needed for success in high school Comp Sci.

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 using the Python programming language.

TECHNOLOGY

fairfaxcollegiate.com/technology

Think like a scientist or engineer while exploring futuristic and emerging technologies such as robotics, drones, and 3D printing.

Technology courses are hands-on and will challenge both beginners and experienced students to learn and apply STEM principles as they work through engaging projects sure to spark their interests.

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 is elementary programming using the EV3 graphical environment.

Robotics Zoo
Grades 3-4

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

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

Robots in Space
Grades 3-4

Use the LEGO Mindstorms EV3 platform to build robots and complete space-themed challenges.

Projects include a Mars rover, a space shuttle, a lunar walker, and asteroid mining. The spotlight skill is programming robots to address project requirements.

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 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 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.

Lessons highlight commercial and industrial applications of 3D printing and different 3D printing materials.

Each student designs and prints six to eight small objects around themes such as cities, puzzles, or fantasy.

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 drone hardware, physics, regulations, and ethics.

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.

Competitive Robotics
Grades 7-9

Use the LEGO Mindstorms EV3 platform to participate in a diverse mix of competitive events.

Projects include drag racing, rock paper scissors, and a reaction time game. The spotlight skill is improving designs through iteration and trial and error.

3D Printing
Grades 7-9

Design and print 3D objects.

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, engineering challenges, and more.

FILM-PHOTO-DESIGN

fairfaxcollegiate.com/film-photo-design

Develop technical and artistic skills. Make films, photos, and designs that inform, persuade, tell stories, and create emotion.

Pick up a camera or computer and let your creativity flow! Learn about digital cinema, DSLR photography, computer graphics, web design, and social media. The only limit is your imagination!

Filmmaking
Grades 3-4 & Grades 5-6

Work with other kids 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 principles of design and image manipulation software to create a variety of projects.

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

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

Photography
Grades 5-6 and Grades 7-9

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

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.

Stop-Motion Animation
Grades 5-6

Use handcrafted figurines and scenery, household objects, and digital cameras to create a compelling story.

This course provides an overview of photography, sound recording, and video editing as part of the filmmaking process.

Students use still cameras, audio recorders, and iMovie to create stop-motion animation films.

Video Production
Grades 7-9

Write, direct, produce, and edit short films with high production values.

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

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

Web Design
Grades 7-9

Practice concepts of design and use HTML, CSS, and graphics tools to design web pages.

Design concepts include balance, contrast, negative space, color theory, and typography.

Projects include landing pages, personal websites, and simple forms.

Influencer Video
Grades 7-9

Create videos for social media that your audience will find, watch, and recommend.

Students begin by learning the history, strategies, and opportunities for creators on major platforms including YouTube, TikTok, Vimeo, Facebook, and Twitter.

Production concepts include casting, location scouting, shot planning, directing, interviewing, camera operation, lighting, and sound.

GAMING

fairfaxcollegiate.com/gaming

Hone your logical and strategic thinking, and develop good communication, sportsmanship, and teamwork skills.

Many courses include the chance to learn about computer hardware or even build computers from individual parts, while others incorporate lessons about computer programming.

Minecraft Modding

Grades 3-4

Customize and extend Minecraft by building your own mods.

Students use MCreator to customize blocks, items, creatures, environments, achievements, triggers, and events.

As a final project, students export their own fully functional Minecraft mods to 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 computer components and assemble gaming PCs using parts supplied by Fairfax Collegiate.

Students then play age-appropriate games such as Rocket League (ESRB Rating: Everyone) and practice creative and strategic thinking.

Strategy Games

Grades 5-6

Develop your strategic thinking and teamwork skills.

Students play historical strategy games such as Civilization 6 and Endless Space 2 (both ESRB: Everyone 10+) on networked PCs and practice tactical and strategic decision making and diplomatic negotiations.

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. Next, they create customized Minecraft minigames.

Intro to Virtual Reality

Grades 5-6

Explore virtual reality apps and games that are both fun and educational.

VR activities include visiting ancient cultures, soaring though space, and navigating environments from the ocean floor to the inside of a human cell.

Students use Meta Quest 2 headsets provided by Fairfax Collegiate to paint and sculpt in 3D, and even venture into the world of Minecraft.

Esports Arena

Grades 7-9

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

Each student assembles a gaming PC using parts provided by Fairfax Collegiate.

Instructors teach students the rules, tactics, and strategy of two games: League of Legends (ESRB Rating: Teen) and Rocket League (ESRB Rating: Everyone).

Students compete in teams and practice leadership and team skills.

Esports League

Grades 7-9

Join a summer esports league, and learn how to start teams at your school.

Students explore the explosive growth of interscholastic esports and how students can work with schools to establish and join formal esports leagues.

Students broadcast and commentate on their own esports matches using competition rules and etiquette. The games they play include 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).

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.

CHANTILLY AND DULLES SCHEDULES

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

Session I: Jun 19-Jun 30

Morning
Fairfax Collegiate Math 5-6
Leadership 5-6
Intro to Programming 5-6
Writing for High School 7-9
Video Production 7-9
3D Printing 7-9
Virtual Reality 7-9
Intro to Algebra II 9-12
PSAT/NMSQT Prep 9-12

Afternoon
Writing Skills & Grammar 5-6
Filmmaking 5-6
Intro to Virtual Reality 5-6
Intro to Geometry 7-9
Python Programming 7-9
Medical Science 7-9
Biomedical Engineering 7-9
College Essay Workshop 9-12
SAT Basic Math 9-12

Session II: Jul 3-Jul 14

Morning
Creative Writing 5-6
Intro to Drones 5-6
Mobile Robotics 5-6
Intro to Algebra 7-9
Mobile Development 7-9
Animal Physiology 7-9
TJ Admissions Prep 7-8
Influencer Video 7-9
SAT Verbal 9-12

Afternoon
Advanced Math 5-6
Intro to Mobile Development 5-6
Stop-Motion Animation 5-6
Reading for Meaning 7-9
Model UN 7-9
Drones 7-9
Robotics Combat 7-9
Intro to Precalculus 9-12
SAT Prep 9-12

Session III: Jul 17-Jul 28

Morning
Problem Solving 5-6
Elementary Debate 5-6
Chem Workshop 5-6
Math for Middle School 6-8
Middle School Debate 7-9
Aerospace Engineering 7-9
Web Design 7-9
Academic Writing 9-12
Intro to Computer Science 9-12

Afternoon
Strategic Reading 5-6
Vehicle Engineering 5-6
Graphic Design 5-6
Writers' Workshop 7-9
Java Programming 7-9
Neuroscience 7-9
PSAT 8/9 Prep 7-9
Intro to Algebra II 9-12
High School Debate 9-12

Session IV: Jul 31-Aug 11

Morning
Fairfax Collegiate Math 5-6
Speech 5-6
Forensic Science 5-6
Filmmaking 5-6
Writing for High School 7-9
Web Development 7-9
3D Printing 7-9
Competitive Robotics 7-9
SAT Prep 9-12

Afternoon
Writing Skills & Grammar 5-6
Intro to 3D Printing 5-6
Robotics Olympiad 5-6
Intro to Geometry 7-9
Forensic Science 7-9
TJ Admissions Prep 7-8
Video Production 7-9
Algorithms with Python 9-12
SAT Math 9-12

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

Session I: Jun 19-Jun 30

Morning
Fairfax Collegiate Math 3-4
Persuasive Speaking 3-4
Intro to Filmmaking 3-4
Strategic Reading 5-6
Human Biology & Anatomy 5-6
Vehicle Engineering 5-6
Writing the Constitution 7-9
Web Development 7-9
SAT Prep 9-12

Afternoon
Writing U.S. Geography 3-4
Scratch Programming 3-4
Spy Science 3-4
Advanced Math 5-6
Speech 5-6
Robotics Olympiad 5-6
Intro to Algebra 7-9
TJ Admissions Prep 7-8
Video Production 7-9

Session II: Jul 3-Jul 14

Morning
Reading Reinforcement 3-4
Minecraft Modding 3-4
Hands-On Science 3-4
Space Engineering 3-4
Problem Solving 5-6
Chem Workshop 5-6
Intro to Photography 5-6
Writing for High School 7-9
Middle School Debate 7-9

Afternoon
Advanced Math 3-4
Public Speaking 3-4
Intro to Robotics 3-4
Writing for Middle School 5-6
Elementary Debate 5-6
Minecraft and Python 5-6
Advanced Algebra 7-9
Medical Science 7-9
Photography 7-9

Session III: Jul 17-Jul 28

Morning
Fairfax Collegiate Math 3-4
Persuasive Speaking 3-4
Spy Science 3-4
Writing Skills & Grammar 5-6
Intro to Programming 5-6
Filmmaking 5-6
Intro to Geometry 7-9
Exploring TJ 6-7
Biomedical Engineering 7-9

Afternoon
Writing Fundamentals 3-4
Intro to Filmmaking 3-4
Fairfax Collegiate Math 5-6
Spy Science 5-6
Intro to 3D Printing 5-6
Reading for Meaning 7-9
Mock Trial 7-9
Python Programming 7-9
Animal Physiology 7-9

Session IV: Jul 31-Aug 11

Morning
Math Workshop 3-4
Public Speaking 3-4
Digital Design 3-4
Creative Writing 5-6
Intro to Mobile Development 5-6
Military Engineering 5-6
Intro to Algebra 7-9
Model UN 7-9
Neuroscience 7-9

Afternoon
Story Writing 3-4
Chemistry Concepts 3-4
Space Engineering 3-4
Advanced Math 5-6
Leadership 5-6
Graphic Design 5-6
Writers' Workshop 7-9
Mobile Development 7-9
PSAT 8/9 Prep 7-9

Visit **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: Jul 3-Jul 14

Morning
Creative Writing 5-6
Intro to Mobile Development 5-6
Mobile Robotics 5-6
Intro to Geometry 7-9
Model UN 7-9
PSAT 8/9 Prep 7-9
Aerospace Engineering 7-9
College Essay Workshop 9-12

Afternoon
Elementary Debate 5-6
Vehicle Engineering 5-6
Writers' Workshop 7-9
Mobile Development 7-9
TJ Admissions Prep 7-8
Competitive Robotics 7-9
Intro to Algebra II 9-12
PSAT/NMSQT Prep 9-12

Session III: Jul 17-Jul 28

Morning
Fairfax Collegiate Math 5-6
Robotics Olympiad 5-6
Writing for High School 7-9
Middle School Debate 7-9
Medical Science 7-9
3D Printing 7-9
Algorithms with Python 9-12
SAT Math 9-12

Afternoon
Speech 5-6
Chem Workshop 5-6
Intro to 3D Printing 5-6
Advanced Algebra 7-9
Python Programming 7-9
Robotics Combat 7-9
High School Debate 9-12
SAT Prep 9-12

Session IV: Jul 31-Aug 11

Morning
Writing Skills & Grammar 5-6
Military Engineering 5-6
Math for Middle School 6-8
Exploring TJ 6-7
Influencer Video 7-9
Virtual Reality 7-9
Intro to Computer Science 9-12
SAT Basic Math 9-12

Afternoon
Stop-Motion Animation 5-6
Intro to Virtual Reality 5-6
Reading for Meaning 7-9
Mock Trial 7-9
Java Programming 7-9
Forensic Science 7-9
Aerospace Engineering 7-9
Intro to Algebra II 9-12

Session V: Aug 14-Aug 18

Morning
Writing Fundamentals 3-4
Creative Writing 5-6
Intro to Programming 5-6
Writing for High School 7-9
Neuroscience 7-9
PSAT 8/9 Prep 7-9
Intro to Precalculus 9-12
SAT Verbal 9-12

Afternoon
Fairfax Collegiate Math 3-4
Fairfax Collegiate Math 5-6
Elementary Debate 5-6
Intro to Algebra 7-9
Python Programming 7-9
TJ Admissions Prep 7-8
Academic Writing 9-12
SAT Prep 9-12

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

Session I: Jun 19-Jun 30

Morning
Math Workshop 3-4
Public Speaking 3-4
Scratch Programming 3-4
Writing Skills & Grammar 5-6
Intro to Programming 5-6
Intro to Photography 5-6
Mobile Robotics 5-6
Strategy Gaming 5-6
Intro to Geometry 7-9
Middle School Debate 7-9
Forensic Science 7-9
Aerospace Engineering 7-9

Afternoon
Writing Fundamentals 3-4
Hands-On Science 3-4
Space Engineering 3-4
Robots in Space 3-4
Fairfax Collegiate Math 5-6
Elementary Debate 5-6
Raspberry Pi Projects 5-6
Forensic Science 5-6
Reading for Meaning 7-9
Photography 7-9
Robotics Combat 7-9
Flight School 7-9

Session II: Jul 3-Jul 14

Morning
Reading Reinforcement 3-4
Chemistry Concepts 3-4
Structural Engineering 3-4
Robotics Zoo 3-4
Advanced Math 5-6
Speech 5-6
Minecraft and Python 5-6
Filmmaking 5-6
Writing the Constitution 7-9
Web Development 7-9
3D Printing 7-9
SAT Prep 9-12

Afternoon
Fairfax Collegiate Math 3-4
Persuasive Speaking 3-4
Minecraft Modding 3-4
Intro to Filmmaking 3-4
Writing U.S. Presidents 5-6
Chem Workshop 5-6
Military Engineering 5-6
Robotics Olympiad 5-6
Math for Middle School 6-8
Mock Trial 7-9
Biomedical Engineering 7-9
Esports Arena 7-9

Session III: Jul 17-Jul 28

Morning
Math Games 3-4
Public Speaking 3-4
Digital Design 3-4
Intro to Robotics 3-4
Writing for Middle School 5-6
Spy Science 5-6
Leadership 5-6
Vehicle Engineering 5-6
Intro to Algebra 7-9
Mobile Development 7-9
Influencer Video 7-9
Esports League 7-9

Afternoon
Story Writing 3-4
Spy Science 3-4
Space Engineering 3-4
Problem Solving 5-6
Intro to Mobile Development 5-6
Raspberry Pi Projects 5-6
Stop-Motion Animation 5-6
Writers' Workshop 7-9
Model UN 7-9
Neuroscience 7-9
Web Design 7-9
Competitive Robotics 7-9

Session IV: Jul 31-Aug 11

Morning
Writing Fundamentals 3-4
Minecraft Modding 3-4
Structural Engineering 3-4
Fairfax Collegiate Math 5-6
Filmmaking 5-6
Intro to 3D Printing 5-6
Intro to Esports 5-6
Writing for High School 7-9
Middle School Debate 7-9
Web Development 7-9
Medical Science 7-9
SAT Prep 9-12

Afternoon
Fairfax Collegiate Math 3-4
Persuasive Speaking 3-4
Scratch Programming 3-4
Intro to Filmmaking 3-4
Strategic Reading 5-6
Elementary Debate 5-6
Minecraft and Python 5-6
Human Biology & Anatomy 5-6
Mobile Robotics 5-6
Intro to Geometry 7-9
Biomedical Engineering 7-9
Esports Arena 7-9

RESTON-EDLIN AND RESTON-NVHC SCHEDULES

Reston-Edlin: Edlin School, 10742 Sunset Hills Rd., Reston, VA 20190

Session I: Jun 19-Jun 30

Morning
Reading Reinforcement 3-4
Chemistry Concepts 3-4
Structural Engineering 3-4
Advanced Math 5-6
Elementary Debate 5-6
Minecraft and Python 5-6
Writers' Workshop 7-9
Forensic Science 7-9
Influencer Video 7-9

Afternoon
Advanced Math 3-4
Minecraft Modding 3-4
Robotics Zoo 3-4
Writing for Middle School 5-6
Forensic Science 5-6
Stop-Motion Animation 5-6
Math for Middle School 6-8
Model UN 7-9
TJ Admissions Prep 7-8

Session II: Jul 3-Jul 14

Morning
Math Workshop 3-4
Public Speaking 3-4
Scratch Programming 3-4
Spy Science 5-6
Strategic Reading 5-6
Graphic Design 5-6
Intro to Algebra 7-9
3D Printing 7-9
Virtual Reality 7-9

Afternoon
Writing Fundamentals 3-4
Spy Science 3-4
Digital Design 3-4
Fairfax Collegiate Math 5-6
Intro to 3D Printing 5-6
Intro to Virtual Reality 5-6
Reading for Meaning 7-9
Java Programming 7-9
PSAT 8/9 Prep 7-9

Session III: Jul 17-Jul 28

Morning
Fairfax Collegiate Math 3-4
Minecraft Modding 3-4
Robots in Space 3-4
Advanced Math 5-6
Chem Workshop 5-6
Filmmaking 5-6
Writing the Constitution 7-9
Middle School Debate 7-9
TJ Admissions Prep 7-8

Afternoon
Writing U.S. Geography 3-4
Chemistry Concepts 3-4
Intro to Filmmaking 3-4
Writing Skills & Grammar 5-6
Speech 5-6
Minecraft and Python 5-6
Mobile Robotics 5-6
Intro to Geometry 7-9
Animal Physiology 7-9

Session IV: Jul 31-Aug 11

Morning
Reading Reinforcement 3-4
Persuasive Speaking 3-4
Hands-On Science 3-4
Space Engineering 3-4
Fairfax Collegiate Math 5-6
Raspberry Pi Projects 5-6
Power Engineering 5-6
Intro to Algebra 7-9
Photography 7-9

Afternoon
Math Games 3-4
Scratch Programming 3-4
Robotics Zoo 3-4
Writing for Middle School 5-6
Intro to Photography 5-6
Writing for High School 7-9
Neuroscience 7-9
Aerospace Engineering 7-9
SAT Prep 9-12

Reston-NVHC: Northern Virginia Hebrew Congregation, 1441 Wiehle Ave., Reston, VA 20190

Session II: Jul 3-Jul 14

Morning
Problem Solving 5-6
Leadership 5-6
Power Engineering 5-6
Writers' Workshop 7-9
Middle School Debate 7-9
Web Development 7-9
Video Production 7-9
Intro to Algebra II 9-12
SAT Prep 9-12

Afternoon
Writing Skills & Grammar 5-6
Filmmaking 5-6
Mobile Robotics 5-6
Intro to Geometry 7-9
Forensic Science 7-9
Exploring TJ 6-7
Flight School 7-9
High School Debate 9-12
SAT Basic Math 9-12

Session III: Jul 17-Jul 28

Morning
Creative Writing 5-6
Intro to Programming 5-6
Human Biology & Anatomy 5-6
Intro to Algebra 7-9
Aerospace Engineering 7-9
3D Printing 7-9
Esports Arena 7-9
College Essay Workshop 9-12
SAT Verbal 9-12

Afternoon
Fairfax Collegiate Math 5-6
Military Engineering 5-6
Intro to Esports 5-6
Writing for High School 7-9
Mock Trial 7-9
Biomedical Engineering 7-9
Robotics Combat 7-9
Intro to Calculus 9-12
SAT Prep 9-12

Session IV: Jul 31-Aug 11

Morning
Advanced Math 5-6
Vehicle Engineering 5-6
Strategy Gaming 5-6
Writing the Constitution 7-9
Middle School Debate 7-9
TJ Admissions Prep 7-8
PSAT 8/9 Prep 7-9
Intro to Algebra II 9-12
Intro to Computer Science 9-12

Afternoon
Writing U.S. Presidents 5-6
Elementary Debate 5-6
Robotics Olympiad 5-6
Advanced Algebra 7-9
Java Programming 7-9
Medical Science 7-9
Flight School 7-9
Academic Writing 9-12
PSAT/NMSQT Prep 9-12

Session V: Aug 14-Aug 18

Morning
Fairfax Collegiate Math 3-4
Writing Skills & Grammar 5-6
Intro to 3D Printing 5-6
Intro to Geometry 7-9
Model UN 7-9
Python Programming 7-9
Esports Arena 7-9
College Essay Workshop 9-12
SAT Prep 9-12

Afternoon
Writing Fundamentals 3-4
Fairfax Collegiate Math 5-6
Chem Workshop 5-6
Writers' Workshop 7-9
Exploring TJ 6-7
3D Printing 7-9
Competitive Robotics 7-9
Algorithms with Python 9-12
SAT Math 9-12

SOUTH RIDING AND ASHBURN SCHEDULES

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

Session I: Jun 19-Jun 30

Morning
Math Games 3-4
Public Speaking 3-4
Intro to Filmmaking 3-4
Creative Writing 5-6
Speech 5-6
Chem Workshop 5-6
Math for Middle School 6-8
Web Development 7-9
Robotics Combat 7-9
SAT Prep 9-12

Afternoon
Writing Fundamentals 3-4
Hands-On Science 3-4
Intro to Robotics 3-4
Problem Solving 5-6
Military Engineering 5-6
Filmmaking 5-6
Writers' Workshop 7-9
Mock Trial 7-9
Academies of Loudoun Prep 7-8
SAT Verbal 9-12

Session II: Jul 3-Jul 14

Morning
Story Writing 3-4
Chemistry Concepts 3-4
Robotics Zoo 3-4
Fairfax Collegiate Math 5-6
Raspberry Pi Projects 5-6
Vehicle Engineering 5-6
Writing for High School 7-9
Forensic Science 7-9
Web Design 7-9
Algorithms with Python 9-12

Afternoon
Fairfax Collegiate Math 3-4
Structural Engineering 3-4
Digital Design 3-4
Writing Skills & Grammar 5-6
Forensic Science 5-6
Robotics Olympiad 5-6
Intro to Geometry 7-9
Python Programming 7-9
Aerospace Engineering 7-9
Academic Writing 9-12

Session III: Jul 17-Jul 28

Morning
Math Workshop 3-4
Scratch Programming 3-4
Space Engineering 3-4
Writing for Middle School 5-6
Human Biology & Anatomy 5-6
Filmmaking 5-6
Reading for Meaning 7-9
Academies of Loudoun Prep 7-8
Drones 7-9
SAT Basic Math 9-12

Afternoon
Reading Reinforcement 3-4
Persuasive Speaking 3-4
Hands-On Science 3-4
Advanced Math 5-6
Intro to Drones 5-6
Mobile Robotics 5-6
Intro to Algebra 7-9
Web Development 7-9
Video Production 7-9
Intro to Algebra II 9-12

Session IV: Jul 31-Aug 11

Morning
Writing Fundamentals 3-4
Spy Science 3-4
Structural Engineering 3-4
Problem Solving 5-6
Minecraft and Python 5-6
Graphic Design 5-6
Math for Middle School 6-8
Middle School Debate 7-9
3D Printing 7-9
College Essay Workshop 9-12

Afternoon
Advanced Math 3-4
Minecraft Modding 3-4
Intro to Robotics 3-4
Strategic Reading 5-6
Spy Science 5-6
Writers' Workshop 7-9
Animal Physiology 7-9
Biomedical Engineering 7-9
Web Design 7-9
High School Debate 9-12

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

Session I: Jun 19-Jun 30

Morning
Fairfax Collegiate Math 3-4
Public Speaking 3-4
Minecraft Modding 3-4
Spy Science 5-6
Strategic Reading 5-6
Elementary Debate 5-6
Intro to Mobile Development 5-6
Intro to Algebra 7-9
Web Design 7-9
Drones 7-9
Esports League 7-9
SAT Prep 9-12

Afternoon
Reading Reinforcement 3-4
Spy Science 3-4
Robotics Zoo 3-4
Fairfax Collegiate Math 5-6
Minecraft and Python 5-6
Graphic Design 5-6
Intro to Drones 5-6
Writing for High School 7-9
Middle School Debate 7-9
Mobile Development 7-9
PSAT 8/9 Prep 7-9
SAT Math 9-12

Session II: Jul 3-Jul 14

Morning
Story Writing 3-4
Scratch Programming 3-4
Intro to Robotics 3-4
Advanced Math 5-6
Speech 5-6
Filmmaking 5-6
Intro to Esports 5-6
Writers' Workshop 7-9
Neuroscience 7-9
Academies of Loudoun Prep 7-8
3D Printing 7-9
Intro to Computer Science 9-12

Afternoon
Math Games 3-4
Persuasive Speaking 3-4
Intro to Filmmaking 3-4
Writing for Middle School 5-6
Raspberry Pi Projects 5-6
Human Bio & Anatomy 5-6
Power Engineering 5-6
Math for Middle School 6-8
Java Programming 7-9
Biomedical Engineering 7-9
Esports Arena 7-9
College Essay Workshop 9-12

Session III: Jul 17-Jul 28

Morning
Advanced Math 3-4
Public Speaking 3-4
Minecraft Modding 3-4
Creative Writing 5-6
Elementary Debate 5-6
Intro to Photography 5-6
Intro to Virtual Reality 5-6
Intro to Geometry 7-9
Forensic Science 7-9
Aerospace Engineering 7-9
Flight School 7-9
PSAT/NMSQT Prep 9-12

Afternoon
Writing Fundamentals 3-4
Chemistry Concepts 3-4
Structural Engineering 3-4
Problem Solving 5-6
Minecraft and Python 5-6
Forensic Science 5-6
Strategy Gaming 5-6
Writing for High School 7-9
Model UN 7-9
Photography 7-9
Virtual Reality 7-9
SAT Prep 9-12

Session IV: Jul 31-Aug 11

Morning
Reading Reinforcement 3-4
Hands-On Science 3-4
Robotics Zoo 3-4
Fairfax Collegiate Math 5-6
Intro to Programming 5-6
Chem Workshop 5-6
Vehicle Engineering 5-6
Intro to Algebra 7-9
Video Production 7-9
Drones 7-9
Esports Arena 7-9
Academic Writing 9-12

Afternoon
Fairfax Collegiate Math 3-4
Space Engineering 3-4
Intro to Filmmaking 3-4
Writing Skills & Grammar 5-6
Raspberry Pi Projects 5-6
Intro to Drones 5-6
Mobile Robotics 5-6
Reading for Meaning 7-9
Python Programming 7-9
Academies of Loudoun Prep 7-8
Robotics Combat 7-9
Intro to Algebra II 9-12

VIENNA AND ONLINE SCHEDULES

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

Session I: Jun 19-Jun 30

Morning
Story Writing 3-4
Chemistry Concepts 3-4
Intro to Filmmaking 3-4
Problem Solving 5-6
Minecraft and Python 5-6
Intro to 3D Printing 5-6
Exploring TJ 6-7
Animal Physiology 7-9

Afternoon
Math Games 3-4
Persuasive Speaking 3-4
Minecraft Modding 3-4
Creative Writing 5-6
Chem Workshop 5-6
Filmmaking 5-6
Intro to Algebra 7-9
Biomedical Engineering 7-9

Session II: Jul 3-Jul 14

Morning
Advanced Math 3-4
Spy Science 3-4
Space Engineering 3-4
Strategic Reading 5-6
Graphic Design 5-6
Robotics Olympiad 5-6
Writing for High School 7-9
Python Programming 7-9

Afternoon
Writing Fundamentals 3-4
Public Speaking 3-4
Robots in Space 3-4
Fairfax Collegiate Math 5-6
Spy Science 5-6
Intro to Programming 5-6
Web Design 7-9
Robotics Combat 7-9

Session III: Jul 17-Jul 28

Morning
Reading Reinforcement 3-4
Minecraft Modding 3-4
Hands-On Science 3-4
Advanced Math 5-6
Forensic Science 5-6
Power Engineering 5-6
TJ Admissions Prep 7-8
Video Production 7-9

Afternoon
Fairfax Collegiate Math 3-4
Intro to Filmmaking 3-4
Robotics Zoo 3-4
Writing Skills & Grammar 5-6
Elementary Debate 5-6
Minecraft and Python 5-6
Math for Middle School 6-8
Forensic Science 7-9

Online: fairfaxcollegiate.com/summeronline

Session I: Jun 19-Jun 30

Morning
Writing for Middle School 5-6
Fairfax Collegiate Math 5-6
Writers' Workshop 7-9
Intro to Algebra 7-9
Python Programming 7-9
TJ Problem-Solving Essay 7-8
Academic Writing 9-12
Intro to Precalculus 9-12
Intro to High School Bio 9-12
PSAT/NMSQT Prep 9-12
SAT Verbal 9-12

Afternoon
Writing Skills & Grammar 5-6
Intro to Programming 5-6
Math for Middle School 6-8
Writing for High School 7-9
Intro to Geometry 7-9
Academies of Loudoun Prep 7-8
TJ Personal Statements 7-8
Intro to Algebra II 9-12
Intro to High School Chem 9-12
College Essay Workshop 9-12
SAT Math 9-12

Session II: Jul 3-Jul 14

Morning
Writing for Middle School 5-6
Intro to Programming 5-6
Math for Middle School 6-8
Writers' Workshop 7-9
Intro to Geometry 7-9
Academies of Loudoun Prep 7-8
TJ Personal Statements 7-8
Academic Writing 9-12
Intro to Algebra II 9-12
Intro to High School Chem 9-12
SAT Math 9-12

Afternoon
Writing Skills & Grammar 5-6
Fairfax Collegiate Math 5-6
Writing for High School 7-9
Intro to Algebra 7-9
Python Programming 7-9
TJ Problem-Solving Essay 7-8
Intro to Precalculus 9-12
Intro to High School Bio 9-12
PSAT/NMSQT Prep 9-12
College Essay Workshop 9-12
SAT Verbal 9-12

Session III: Jul 17-Jul 28

Morning
Writing Skills & Grammar 5-6
Intro to Programming 5-6
Math for Middle School 6-8
Writing for High School 7-9
Intro to Geometry 7-9
TJ Problem-Solving Essay 7-8
Intro to Algebra II 9-12
Intro to High School Bio 9-12
PSAT/NMSQT Prep 9-12
College Essay Workshop 9-12
SAT Verbal 9-12

Afternoon
Writing for Middle School 5-6
Fairfax Collegiate Math 5-6
Writers' Workshop 7-9
Intro to Algebra 7-9
Python Programming 7-9
Academies of Loudoun Prep 7-8
TJ Personal Statements 7-8
Academic Writing 9-12
Intro to Precalculus 9-12
Intro to High School Chem 9-12
SAT Math 9-12

Session IV: Jul 31-Aug 11

Morning
Writing Skills & Grammar 5-6
Fairfax Collegiate Math 5-6
Writing for High School 7-9
Intro to Algebra 7-9
Python Programming 7-9
Academies of Loudoun Prep 7-8
TJ Personal Statements 7-8
Intro to Precalculus 9-12
Intro to High School Chem 9-12
College Essay Workshop 9-12
SAT Math 9-12

Afternoon
Writing for Middle School 5-6
Intro to Programming 5-6
Math for Middle School 6-8
Writers' Workshop 7-9
Intro to Geometry 7-9
TJ Problem-Solving Essay 7-8
Academic Writing 9-12
Intro to Algebra II 9-12
Intro to High School Bio 9-12
PSAT/NMSQT Prep 9-12
SAT Verbal 9-12

Session V: Aug 14-Aug 18

Morning
Writing for Middle School 5-6
Fairfax Collegiate Math 5-6
Writers' Workshop 7-9
Intro to Algebra 7-9
Python Programming 7-9
TJ Problem-Solving Essay 7-8
Academic Writing 9-12
Intro to Precalculus 9-12
Intro to High School Bio 9-12
PSAT/NMSQT Prep 9-12
SAT Verbal 9-12

Afternoon
Writing Skills & Grammar 5-6
Intro to Programming 5-6
Math for Middle School 6-8
Writing for High School 7-9
Intro to Geometry 7-9
Academies of Loudoun Prep 7-8
TJ Personal Statements 7-8
Intro to Algebra II 9-12
Intro to High School Chem 9-12
College Essay Workshop 9-12
SAT Math 9-12





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