



FAIRFAX COLLEGIATE SUMMER 2016

WRITING • READING • MATH • SCIENCE • TEST PREP • ESL
PUBLIC SPEAKING • ENGINEERING • ROBOTICS • PROGRAMMING
ART • DESIGN • FILMMAKING

13
NO. VA
LOCATIONS

AGES
8 TO 14

FAIRFAX COLLEGIATE SUMMER 2016

This summer your child can have fun *and* learn!

Since 1993, the Fairfax Collegiate Summer Program has provided challenging and engaging courses in writing, reading, math, science, test prep, ESL, public speaking, engineering, robotics, programming, art, design, and filmmaking.

Small classes take place in a relaxed and informal atmosphere at our thirteen locations throughout Northern Virginia. 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. Breaks include soccer, basketball, and other sports.

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

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ACADEMICS, ARTS, TECHNOLOGY—A NEW UNITY!

Alexandria Campus

Beth El Hebrew Congregation
3830 Seminary Rd.

Ashburn - East Campus

Loudoun School for the Gifted
44675 Cape Ct.

Ashburn - West Campus

St. Theresa Catholic School
21370 St. Theresa Ln.

Chantilly Campus

St. Timothy Catholic School
13809 Poplar Tree Rd.

Dulles Campus

St. Veronica Catholic School
3460 Centreville Rd.

Fairfax Campus

Gesher Jewish Day School
4800 Mattie Moore Ct.

Falls Church Campus

St. Katherine Greek Orthodox Church
3149 Glen Carlyn Rd.

Herndon Campus

St. Joseph Parish Hall
750 Peachtree St.

Leesburg Campus

Loudoun Country Day School
20600 Red Cedar Dr.

McLean Campus

Redeemer Lutheran Church
1545 Chain Bridge Rd.

Oakton Campus

Pinnacle Academy
2854 Hunter Mill Rd.

Reston Campus

Northern Virginia Hebrew Congregation
1441 Wiehle Ave.

Vienna Campus

Green Hedges School
415 Windover Ave.

Office Address

722 Grant St., Suite J
Herndon, VA 20170
703 481-3080 • Fax 703 481-3081



PROGRAM OVERVIEW

Session Dates

Session I	June 27 to July 8 (No Class July 4)
Session II	July 11 to July 22
Session III	July 25 to August 5
Session IV	August 8 to August 19
Session V	August 22 to September 2

Program Times

Morning	8:30 a.m. to 12:00 p.m.
Afternoon	12:30 p.m. to 4:00 p.m.
Full Day	8:30 a.m. to 4:00 p.m.

Extended Care Times

Morning	7:30 a.m. to 8:15 a.m.
Afternoon	4:15 p.m. to 6:00 p.m.

Program Fees

Session I (9 days)	
Full Day	\$685 per session
Half Day	\$425 per session
Sessions II-V (10 days)	
Full Day	\$790 per session
Half Day	\$485 per session
Extended Care	
Full Day	\$170 per session
Half Day	\$85 per session

Discounts

Siblings or Multiple Sessions	5%
Early Registration and Payment	5%
(The Early Registration and Payment deadline is April 3, 2016.)	

2016 Location Discounts
Register before May 1 and save \$100 per full-day session and \$50 per half-day session at these locations:

Ashburn - East
Ashburn - West
Fairfax
Falls Church
Leesburg

SUMMER PROGRAM REGISTRATION

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

Grade Levels and Placement

Course grade levels are rising (Fall, 2016) grade levels. Please contact us before enrolling a child in a course designated for older or younger children.

Registration Deadlines

We enroll children 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 May 1, 2016. There is a 5% discount for full payment by March 15.

Registration Changes

Registration changes may be made at no charge if the total number of classes remains the same or increases.

Cancellation Policy

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

Emergency Contact Form

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.



WRITING AND READING

Writing Fundamentals

Grades 3-4

Students write and revise sentences, paragraphs, and short essays.

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 & Revising

Grades 3-4

Students write, revise, and discuss personal narratives, essays, short stories, and poems.

Topics include writing organized paragraphs, constructing persuasive written arguments, providing constructive criticism, and revising drafts. Instructors provide detailed written and verbal feedback on student work.

The final project is a class literary anthology.

Story Writing

Grades 3-4

In this creative writing course, students learn to craft their own stories. They 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. As a final project, students create their own short stories.

Reading Reinforcement

Grades 3-4

This course emphasizes reading as well as writing.

Students read, discuss, and respond to diverse readings including poems, fables, stories, essays, and journalism.

Assignments include summaries, reading comprehension exercises, and interpretations.

Reading Newbery Winners

Grades 5-6

Every year the American Library Association awards the Newbery Medal for the best new work of literature for children.

In this course students read, discuss, and write about two Newbery Award-winning books, *A Wrinkle in Time* by Madeleine L'Engle, and *When You Reach Me* by Rebecca Stead.

Students keep their copies of the books and learn how to use underlining, margin notes, and diagramming to improve comprehension.

Writing Skills & Grammar

Grades 5-6

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

Topics include brainstorming, outlining, thesis statements, sentence structure, transitions, essay organization, active voice, word choice, and common errors.

The Writing Process

Grades 5-6

Students prewrite, draft, revise, edit, and share fiction, nonfiction, and poetry.

Instructors guide students through each step of the writing process and provide detailed feedback. Students improve their ideas, organization, spelling, and mechanics.

For a final project, students create a class anthology of essays and stories.

Creative Writing

Grades 5-6

Students read, write, and discuss personal narratives, short stories, plays, and poems.

Students revise drafts of their works based on instructors' written comments.

The final project is a class literary anthology. Students may enter their works into writing contests.

Strategic Reading

Grades 5-6

Students learn and apply reading strategies and tools including close reading, looking for cause and effect, note-taking, outlining, paraphrasing, questioning, skimming, summarizing, and synthesizing.

Students write and revise responses to readings from newspapers, essays, biographies, speeches, and short stories.

Writing Seminar

Grades 5-6

This is a fast-paced, advanced class for students who are enthusiastic writers.

Students read and discuss great short stories and write and revise their own stories.

Topics include point of view, character, conflict, plot, setting, atmosphere, dialogue, and narrative voice.

The final project is a class anthology of short stories. Instructors help students submit their best work to writing contests.

High School Writing

Grades 7-9

Students practice short-form high school-level writing focusing on five-paragraph essays.

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

Students write and revise daily five-paragraph essays.

Reading for Meaning

Grades 7-9

This is an introduction to critical reading and writing. 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.

Epic Fantasy

Grades 7-9

In this introduction to the fantasy genre, students read and write stories set in immersive worlds of magic and mythical creatures. Discussions focus on literary elements such as the hero's journey, symbolism, and the struggle of good against evil.

Reading passages are taken from classic and modern fantasy series. The class also conducts an in-depth study of the book *Miss Peregrine's Home for Peculiar Children* by Ransom Riggs.

Writers' Workshop

Grades 7-9

Writers' Workshop classes provide 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 assignments include short stories, poems, articles, and personal essays.

Dystopian Futures

Grades 7-9

Dystopian literature imagines future societies with horrible flaws—whether oppression, violence, poverty, or fear. In this class, students explore the relationship between these futures and today's society and analyze the world around them to create their own dystopian futures.

The course will begin with a study of excerpts from a variety of dystopian future sources. Activities include creating your own dystopian future, and an in-depth study of the book *An Ember in the Ashes* by Sabaa Tahir.

Elements of Style

Grades 7-9

Students learn how to “make every word tell” by practicing the principles of correct usage and effective English style. Lessons are based on Strunk and White's *The Elements of Style*.

Topics include rules of usage, principles of composition, matters of form, commonly misused expressions, writing for clarity, and key grammatical terms.

Students write daily passages in creative, academic, and persuasive styles, and receive detailed feedback from instructors.



Fairfax Collegiate Math

Grades 3-4 & Grades 5-6

Students learn, practice, and review key math concepts and skills.

The course diagnostic test is aligned with the Virginia Standards of Learning. Instructors individualize assignments and group students based on diagnostic test results.

Daily activities include small-group instruction and discussion, individual work, enrichment, and math games.

Fairfax Collegiate Math 3-4 topics include multiplication, division, fractions, decimals, geometry, probability, and estimation.

Fairfax Collegiate Math 5-6 topics include fractions, decimals, pre-algebra, geometry, probability, statistics, and number theory.

Math Fundamentals

Grades 3-4

Students develop core arithmetic skills. Lessons use hands-on manipulatives and models to reinforce concepts. They practice single- and multi-digit operations with individualized practice and small group activities.

This course is recommended for students who want additional support and strategies for the concepts they have learned in their regular math classroom.

Topics include whole number operations, fractions, and word problems.

Word Problems

Grades 3-4

Students review math concepts and learn techniques to solve single- and multi-step word problems.

This individualized course is appropriate for a range of students. Instructors use diagnostic test results to group students, design lessons, and assign problem sets.

Students work on different types of problems based on their current level. The types of word problems that students work on include integer, decimal, fraction, percent, proportion, measurement, probability, statistics, algebra, and geometry problems.

Math Games

Grades 3-4

Students develop math skills and analytic thinking by playing games, solving logic puzzles, and completing small-group challenges. This is a hands-on course that emphasizes application of basic skills and problem-solving strategies in a fun, encouraging environment.

Games and activities include math mysteries, checkers, Smath (Math Scrabble), Sudoku, nonograms, mental math Olympics, Forbidden Island, Math 24, and other enrichment games.

Math and logic topics include arithmetic, mental math, basic game theory, spatial reasoning, and decision analysis.

Cryptography

Grades 5-6

Make and break secret codes using math! Students learn the historical evolution of cryptography in a hands-on exploration of real-world codes, including Caesar ciphers, substitution ciphers, Vigenère ciphers, and RSA encryption.

As a final project, students develop their own cryptosystem. Topics include modular arithmetic, factoring, inverse functions, exponents, and prime numbers.

Computer Math

Grades 5-6

Students learn to use educational technology to investigate math topics, run simulations, and solve challenging problems. Topics include introductory algebra, geometry, graphing, and statistics concepts.

Students use computer models to study real-world scenarios such as investing and projectile motion. Software includes Geogebra, Tinkerplots, and an online version of Mathematica.

Problem Solving

Grades 5-6

Students review and prepare for middle school math by learning and practicing strategies to solve word problems. The diagnostic test and math topics align with the Virginia Standards of Learning.

Problem solving topics include diagramming, visualization strategies, and common problem types. Math topics include pre-algebra, geometry, proportion, measurement, statistics, and probability.

Activities include discussion, daily practice, and Math Olympiad challenges.

Brain Games

Grades 5-6

Students develop logical and mathematical thinking by playing games, completing puzzles, and analyzing strategies. Games and puzzles include checkers, chess, Go, Monopoly, Hoshiwokokeru, Math 24, Stratego, Resistance, Rubik's cubes, and math enrichment games.

Math and logic topics include binary algebra, spatial reasoning, decision analysis, game theory, algorithms, basic economics, and mental math.

As a final project, students create their own mathematically balanced board games.

Intro to Pre-Algebra

Grades 6-8

Students prepare for Pre-Algebra by learning and reviewing basic algebraic concepts.

On the first day of this individualized course, students take diagnostic tests to help tailor personalized curricula.

The course begins with a review of arithmetic, fractions, exponents, and decimals. Students then learn how to simplify, solve, and graph algebraic equations.

Intro to Geometry

Grades 7-9

This is an individualized course for students preparing for middle school and high school Geometry.

Students complete a diagnostic test on the first day of class to identify specific needs.

The sequence of topics includes lines, segments, circles, squares, angles, parallel lines, triangles, and polygons.

Contest Math

Grades 7-9

Students work individually and in small groups to prepare for math competitions including the Mathematics Olympiad, MathCounts, AMC 8, and AMC 10.

Instructors group students based on students' goals and diagnostic test results. Students discuss concepts and strategies, solve and review problem sets, complete exams under simulated contest conditions, and work individually with instructors.

Intro to Algebra

Grades 7-9

Students prepare for Algebra I by studying key pre-algebra and algebra concepts.

This is an individualized course. Students complete a diagnostic test on the first day of class to identify their specific needs.

The sequence of topics includes negative numbers, variables, terms, expressions, equations, polynomials, rational numbers, rational expressions, and quadratics.

Probability and Statistics

Grades 7-9

This project-based course leads students through a detailed study of the data and concepts that affect our everyday lives.

Topics include representing and analyzing data in a variety of formats, statistical literacy, experimental and theoretical probability, and permutations and combinations. For a final project, students design and conduct their own survey or experiment and then present the results.



"I love the opportunity to teach small classes and individualize my instruction."

Jacob Hirsch
Mathematics Instructor



Chemistry Concepts

Grades 3-4

Students perform experiments to learn about key chemistry concepts: matter, forces, heat, energy, phase changes, acids, bases, and reactions.

Students also learn important chemistry terminology and laboratory methods.

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

The Scientific Method

Grades 3-4

Students conduct experiments to investigate the science behind everyday phenomena. They learn about experimental design, observation, measurement, analysis, and reporting.

Topics include basic chemistry, physics, and biology. Daily experiments tackle topics including germs and bacteria, aerodynamics, chemical reactions, structural integrity, reflex testing, and the application of force, friction, and propulsion.

Science Olympiad

Grades 3-4 & Grades 5-6

Students practice for the Science Olympiad (<http://www.soinc.org>). Teams compete in events covering scientific knowledge, processes, and applications.

Practice event topics include earth sciences, physics, astronomy, biology, and chemistry.

Spy Science

Grades 3-4

Students learn the secrets of spying, sleuthing, and subterfuge. Hands-on activities help students hone their detective skills by teaching real life techniques used in information collection and undercover work.

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 integrate what they have learned throughout the course.

Human Biology & Anatomy

Grades 5-6

Human Biology & Anatomy is an introduction to human physiology, focusing on four key organ systems: the cardiovascular system, the digestive system, the nervous system, and the skeletomuscular system.

Daily 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.

Physics

Grades 5-6

This is a broad introduction to physics at a middle school level, including basic kinematics, optics, and electromagnetism.

Topics include force, work, motion, potential energy, kinetic energy, chemical energy, friction, electricity, magnetism, light, wave, and heat transfer.

Activities include constructing motors, batteries, and steam engines, performing experiments in optics and magnetism, and learning about kinematics and force using air tracks, pulleys, dynamics carts, and spring scales.

Forensic Science

Grades 5-6 & Grades 7-9

This is a hands-on introduction to the science and laboratory techniques of law enforcement.

Lab topics include crime scenes, tool marks, chemical analysis, counterfeit documents, dental impressions, fiber identifications, fingerprints, glass fractures, handwriting analysis, forgeries, ink chromatography, shoe prints, forensic anthropology, blood splatter patterns, and DNA electrophoresis.

As a final project, each class attempts to solve a simulated crime using the forensic techniques learned.



Genetics

Grades 7-9

This is a high school-level presentation of genetics for advanced middle school students.

Topics include Mendelian genetics, the cell, DNA, chromosomes, mutations, cancer, bacterial transformation, recombination, viruses, genetic engineering, transcription and translation, evolution, and the human genome.

Activities include small-group discussion of reading assignments, hands-on activities, demonstrations, short research papers, and student presentations.

Animal Physiology

Grades 7-9

Students learn about animal anatomy, physiology, and organ structures across a variety of taxonomies by completing dissections. They learn about major differences in physiology between different phyla and class 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, skeletal and organ structures, nervous, circulatory, and digestive systems, and convergent and divergent evolution.

Neuroscience

Grades 7-9

Students 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.

Newtonian Physics

Grades 7-9

This is a high-school level presentation of classical mechanics for students who are comfortable with basic algebra.

Topics include Newton's laws, kinematics, inertia, forces, energy, work, friction, vectors, velocity and acceleration.

Experiments explore distance, velocity, acceleration, and force using air tracks, dynamics carts, ballistic cars, pulleys, and spring scales.

Lasers

Grades 7-9

Students learn about laser safety, properties, theory, and design through demonstrations and experiments.

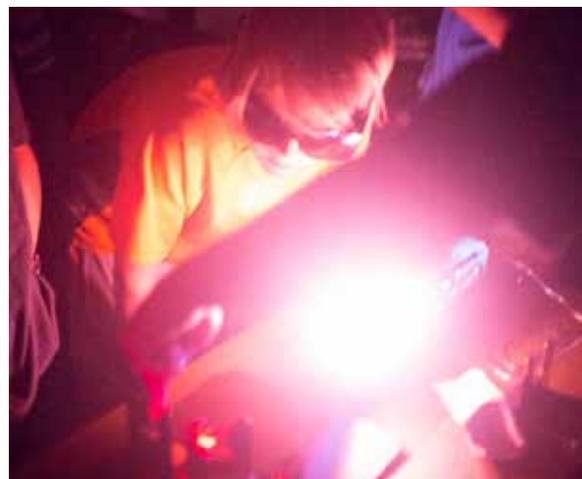
Experiments cover fiber optics, reflection, refraction, holograms, and lasers as measurement tools. Topics include laser design, laser physics, continuous and pulsed lasers, types of lasers, and laser applications.

Laser projects include measuring refraction indices, navigating laser mazes, experimenting with fiber optics, and building spectroscopes.

This course uses only low-power, "eye-safe" lasers, and students wear safety goggles.



"Hands-on experiments make the Fairfax Collegiate science courses so engaging!"
Steve Pak
Science Instructor



PUBLIC SPEAKING

Persuasive Speaking

Grades 3-4

Students practice developing and delivering skillful, thoughtful, well-reasoned arguments.

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

Students write and deliver short speeches and presentations on topics of their own choosing in a comfortable 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

This course introduces elementary students to parliamentary debate.

Debate topics are both challenging and directly relevant to students. The rule structure is less rigid than standard parliamentary debate rules.

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

Speech

Grades 5-6

Students deliver written, extemporaneous, and impromptu speeches.

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.

Rhetoric

Grades 5-6

Students develop persuasive speaking skills and learn about the craft and history of rhetoric. They study great classic speeches through history, from ancient Greek orators through modern political leaders.

Students learn to create their own rhetorical speeches and how to present them effectively. They write and deliver persuasive speeches.

Topics include rhetorical appeals, dialectic, propaganda, media 'spin,' and effective oratorical strategies.

Middle School Debate

Grades 7-9

This course is based on the Middle School Public Debate Program (<http://www.middleschooldebate.com>).

Students engage in debates which involve a wide variety of issues of public concern at the local, state, national, and global levels, as well as topics that are of direct relevance to students.

Mock Trial

Grades 7-9

Students take on courthouse roles such as attorneys, witnesses, and jurors in a mock trial presided over by an instructor-judge.

Students study and engage in trials, from jury selection, opening statements, examining witnesses, presenting evidence, closing arguments, and deliberating a verdict.

Classroom discussions address the role of courts in a democracy, the meaning of "due process," and the nature of justice. Students examine the differences between civil and criminal trials and the prosecution's burden of proving guilt beyond a reasonable doubt.

Model U.N.

Grades 7-9

Students assume the roles of ambassadors to the U.N. Security Council and work together to avert military confrontations and resolve international disputes. 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.

This course is based on the Peacekeeping Global Classrooms Curriculum published by the United Nations Association of the U.S.A. (<http://www.unausa.org>).



TEST PREP AND ESL

T.J. Exam Prep

Grades 7-8

Middle school students prepare for the math, and verbal sections of the Thomas Jefferson High School Admissions Exam. Review materials include the official T.J. Exam study guide, commercial SHSAT preparation guides, and Fairfax Collegiate's own test review manual.

The math review includes algebra and geometry topics, word problems, and computation questions. The verbal review includes scrambled paragraph problems, logical reasoning questions, and reading comprehension exercises.

Each student receives an evaluation detailing areas for improvement.

T.J. SIS Essay Prep

Grades 7-8

Students prepare for the Student Information Sheet (SIS) portion of the admissions process for Thomas Jefferson High School for Science and Technology (TJHSST).

Students write daily timed essays. Instructors provide detailed suggestions for improvement of grammar, mechanics, organization, and ideas.

Topics include exam essay strategies, essay organization, essay scoring, essay planning, addressing a prompt correctly, developing supporting arguments, and grammar. The course also explores the TJSSST admissions process from the student and school perspectives.

Loudoun AOS Prep

Grades 7-9

Students learn about the Loudoun Academy of Science program and admissions. They also prepare for the PSAT (the standardized test required for AOS admission) and for the AOS timed writing sample.

This course uses *The Official SAT Study Guide* and covers all three sections of the PSAT. Students practice on actual PSAT exams under timed conditions.

PSAT/SAT Prep

Grades 7-9

Students prepare for the math, reading, and writing sections of the PSAT and SAT. The course text is *The Official SAT Study Guide*, published by the College Board.

The math review includes numbers and operations, algebra and functions, geometry and measurement, data analysis, statistics, and probability. The reading review emphasizes vocabulary, sentence completion, and reading comprehension questions.

Students complete one actual PSAT and three actual SAT exams under timed conditions. They become familiar with question formats, test scoring, and time-management strategies.

ESL

Grades 5-6 & Grades 7-9

This is an English immersion class for beginner and intermediate ESL students, focusing on oral and written communicative competence. Topics include grammar, vocabulary, phonics, and American culture. Activities include picture-word inductive models, concept maps, reading logs, word games, dialogues, and group presentations.

Students practice reading, writing, speaking, and listening in English, and receive detailed feedback and encouragement from instructors.



Space Exploration

Grades 3-4

Students investigate the latest developments in astronomy and space travel by performing experiments, completing hands-on projects, and running computer simulations.

Students explore the scientific and engineering principles behind space suits and rocketry, the phases of the moon, telescopes, rovers, and zero-gravity equipment. They build model vehicles and spacecraft, including a water pressure-powered rocket. Other activities include planning and simulating a space mission, inventing their own constellations, and finding stars and planets in planetarium software.

Intro to Engineering

Grades 3-4

Students explore engineering through hands-on activities focusing on the six classical simple machines: lever, wheel and axle, pulley, ramp, wedge, and screw.

Students also investigate the branches of engineering, practice the engineering design process, and learn about force, motion, and energy.

Construction Engineering

Grades 3-4

Using a variety of construction platforms, students complete building challenges and learn principles of engineering, architecture, and physics.

Students employ the “learn by doing” philosophy, using Lego blocks, Erector sets, K’NEX, unit blocks, and basic classroom supplies to fulfill challenge specifications through small-group design and trial-and-error.

Physics topics include material density, center of gravity, force diagrams, and geometry principles. Activities include weight and balance challenges, height competitions, and bridge design.

Minecraft Engineering

Grades 3-4

Applying the “learning through play” philosophy, this course provides a survey of engineering concepts relevant to Minecraft tactics, strategy, and customization.

Activities include 2D and 3D coordinate systems, other math in Minecraft, redstone electronic circuits, ComputerCraft mod programming, and texture customization and mapping.

Siege Engines

Grades 5-6

Students 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.

Engineering topics include simple machines, tension, torque, two-dimensional kinematics, and the design process.

Civil Engineering

Grades 5-6

Students explore engineering concepts by building models of bridges, skyscrapers, roller coasters, and other architecture and construction projects. Projects are built from K’NEX model kits as well as from scratch. As a final project, students design and build their own building.

Topics include Newton’s laws, energy, force, and motion physics. Activities include weight capacity competitions, roller coaster loop design, and other engineering challenges.

Intro to Raspberry Pi

Grades 5-6

Students explore the basics of computer engineering and programming by configuring, customizing, and using Raspberry Pi computer systems in the context of electronics and programming challenges.

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.

Prototyping and 3D Printing

Grades 5-6

Using a Makerbot 3D printer, students plan, design, fabricate, assemble, and refine solutions to real-world challenges and problems. Students learn to operate the Makerbot Replicator 2 and Digitizer, create a productive makerspace, and develop a tinkerer’s mindset.

Students undertake design challenges and iteratively plan, build, and test solutions to the problem. As a final project, students work in groups to create a prototype for a device of their own design.

Electronics

Grades 5-6

Students begin by using Snap Circuits (<http://www.snapcircuits.net>) to learn about electronics, including current, voltage, resistance, capacitance, circuits, Ohm’s Law, and electromagnetism.

Students then apply this knowledge to invent, design, and engineer their own DIY gadgets using littleBits (<http://littlebits.cc>), an open source library of magnetic electronic modules.

Projects include a motion-sensing alarm, a robotic crane, a bike horn, a cardboard robot, a light spectrometer, and students’ self-designed creations.

Inventing and 3D Printing

Grades 7-9

Students learn to design and test their own inventions using 3D printing and other fabrication techniques. They operate the Makerbot Replicator 2 to 3D print objects of their own design, pitch their invention ideas to small groups, and iterate on design ideas.

Students also learn to use computer-assisted design software tools to create their invention blueprints. They generate models using the Makerbot Digitizer 3D scanner. For final projects, they print designs and create prototypes of their inventions to take home.

Arduino Electronics

Grades 7-9

Middle school students explore electronics, computers, and programming by building projects with Arduino, an open-source electronics prototyping platform (<http://www.arduino.cc>).

Projects include LED Dice, a binary counter, a Morse code translator, a lie detector, and a motion-sensing alarm.

Consistent with the Arduino philosophy of learning by tinkering and rapid prototyping, students also develop their own projects by interfacing “electronic junk” to Arduino circuit boards.

Raspberry Pi Projects

Grades 7-9

Students use Raspberry Pi computers to build embedded computing projects and explore computer hardware. This course combines computer engineering, electronics, and programming,

Students build their own homebrew arcade game cabinets, security cameras, and GPS trackers, and learn about input, output, processing, basic Python programming, and storage.

Biomedical Engineering

Grades 7-9

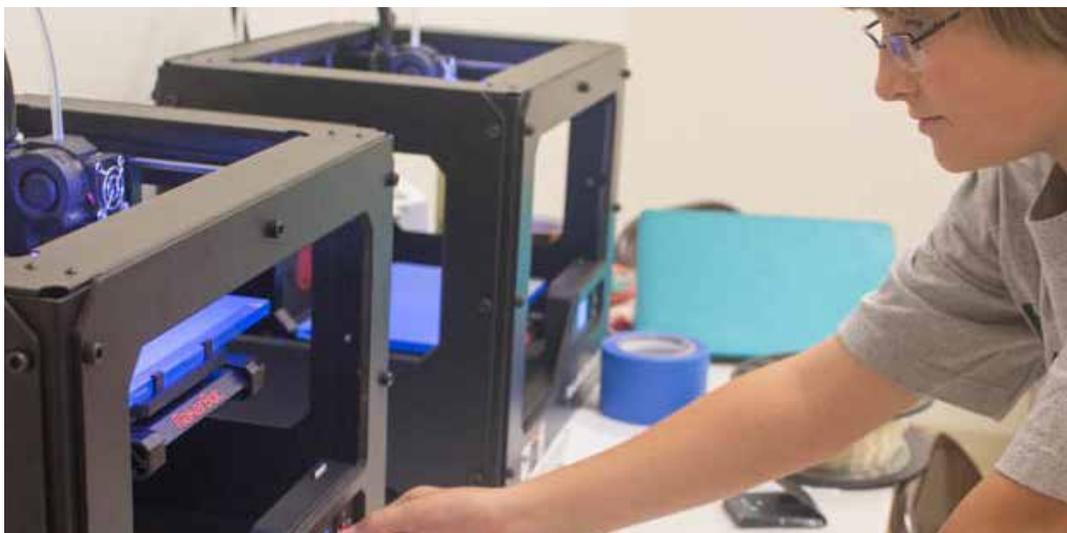
Students apply engineering principles to physiology and medicine, developing understanding through classroom demonstrations, discussions, and experiments. They also propose and prototype medical equipment, prostheses, and artificial organs using 3D printers, computer simulations, and traditional modeling materials.

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



“At Fairfax Collegiate we explore the past, present, and future of machines and technology.”

Nikitha Reghu
Engineering Instructor



ROBOTICS

Intro to Robotics

Grades 3-4

This course for younger students emphasizes robot assembly and simple programming.

Students construct stationary and mobile robots using the entire LEGO Mindstorms NXT component set.

There is an introduction to programming using the graphical NXT-G language.

Robotics Zoo

Grades 3-4

Robotics Zoo combines biology and robotics. Students model real and imaginary animals using LEGO Mindstorms NXT robots.

Students build robotic representations of spiders, frogs, elephants, and stegosaurus, and program robots using NXT-G to mimic animal behaviors.

For the final project, students imagine a new life form and build a robotic representation.

Robots in Space

Grades 3-4

Students learn about the use of robots in space travel, and build spaceships, rovers, and autonomous vehicles using LEGO Mindstorms NXT robotics kits.

Projects include MarsRoverBot, SpaceDiverBot, ShuttleBot, LunarBot, and SpaceMinerBot.

Construction Robots

Grades 3-4

This course integrates robotics, architecture, and construction engineering.

Students design, build, program, and operate LEGO Mindstorms NXT construction-themed robots including machine tools, HammerBot, ForkliftBot, and WreckingBallBot. Advanced students complete ambitious vehicle robots including BackhoeBot and BucketBot.

EV3 Robotics Olympiad

Grades 5-6

This course introduces students to competitive EV3 robotics.

EV3 Robotics Olympiad events include races, obstacle courses, mazes, weight lifting challenges, and robot soccer.

Working in pairs, students design, build, program, and “coach” LEGO Mindstorms EV3 robots for each event.

EV3 Mobile Robotics

Grades 5-6

Students assemble and program mobile LEGO Mindstorms EV3 robots.

Topics include motors, gear ratios, measurement, navigation, path planning, and obstacle avoidance. This course emphasizes EV3 programming.

EV3 Robots include Taskbot, DragRacerBot, REMBot, and MazeBot.

EV3 Robotics Engineering

Grades 5-6

Students use the EV3 Robotics platform to learn about the engineering process, project management, problem solving, and teamwork.

Projects include guided investigations and student-directed development. Students build a mining robot, a patrol robot, and a tree measurer robot.

Students keep engineering journals, and deliver project proposals, design reviews, and project solution demonstrations.

EV3 Robotics Platform

Grades 5-6

EV3 is LEGO’s latest robotics platform, which features new motors, sensors, remote controllers, and programming capabilities.

Students design, build, and program EV3 robots to respond to sight, sound, color, touch, infrared, and tilt sensors.

Projects include hill climbing, beacon retrieval, color sensor navigation, and robot combat.

EV3 With Python

Grades 5-6

Students use the Python programming language to program LEGO Mindstorms EV3 robots and run the ev3dev operating system.

Topics include robot assembly, basic Python programming, Linux, the Python EV3 API, and problem solving strategies.

Projects include constructing and programming Explor3r bot, R3moteControl bot, and the Snatch3r robotic arm.

EV3 Robotics Combat

Grades 7-9

Students construct EV3 combat robots and battle in robotic gladiator tournaments.

Competitions include remote control and pure artificial intelligence contests.

Students use the LEGO EV3 programming language and conventional EV3 sensors, motors, and appendages. Advanced students learn LEGO EV3 RobotC programming and create custom sensors and battle attachments.

EV3 Robotic Vehicles

Grades 7-9

This course explores the new EV3 motors, sensors, remote controllers, and programming capabilities.

Students explore different methods of mobility utilizing wheels, treads, bipedal and tripod designs to learn about mechanical and digital transmissions, static equilibrium, gear ratios, and sensory feedback.

Students work through the *The Lego Mindstorms EV3 Laboratory* to build WatchGooz3, Rov3r, Sup3rcar, and Sentinel31 robots.

EV3 Competitive Robotics

Grades 7-9

This course focuses on programming the new EV3 Intelligent Brick, which is orders of magnitude more powerful than the legacy NXT Intelligent Brick.

Students build and program EV3 robots to compete in complex challenges. Projects include Segway Bot, SoccerBot, SumoBot, and SniperBot.

VEX Robotics

Grades 7-9

The VEX Robotics Design System (www.vexrobotics.com) is the leading high school and college-level robotics platform.

Students work through the *VEX Inventor's Guide* and become familiar with key VEX subsystems: structure, motion, power, sensor, control, logic, and programming.

EV3 With Java

Grades 7-9

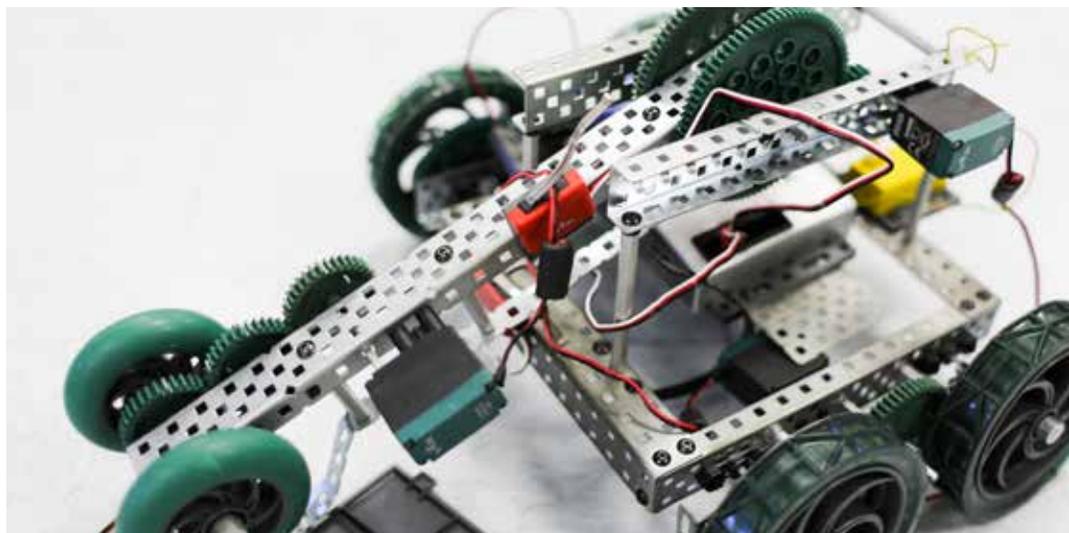
Students use the Java programming language to program Mindstorms EV3 robots.

Java topics include basic syntax, methods, control structures, variables, and the leJos library. Robotics topics include assembly, running programs on the EV3 Intelligent Brick, and motor and sensor configuration.

Projects include the construction and programming of AckerBot, Perpetual Rover, WarBird, and SCARA Robotic Arm.



"Robotics at Fairfax Collegiate is a challenging introduction to engineering and programming."
Elisa Ballschneider
Robotics Instructor



PROGRAMMING

Kodu Programming

Grades 3-4

Students create 3D games using Kodu, (<http://www.kodugamelab.com>), a visual programming language that emphasizes creativity, problem solving, and storytelling.

Students learn about Kodu worlds, landscapes, terrain, objects, characters, paths, behaviors, clones, interactions, strategies, pages, and camera angles.

Working alone or in pairs, students design games and optionally share them on the Planet Kodu website.

Scratch with WeDo

Grades 3-4

Scratch (<http://scratch.mit.edu>) provides a fun and engaging introduction to programming. Students snap graphical blocks together to create scripts that control media such as graphics, photos, and sound. Scratch software integrates with LEGO WeDo robotics hardware, allowing students to manipulate animations with physical sensor input.

Activities include playing with sample projects and creating original projects with the assistance of instructors.

Small Basic

Grades 3-4

Students learn the basics of programming by designing, coding, and modifying simple 2D games using Microsoft Small Basic. Topics include input and output, variables, computer math, if-then statements, loops, and simple graphics.

Projects include math problem solvers, guessing games, fractal generators, and pong. For the final project, students create their own games.

Minecraft Modding

Grades 3-4

Using programming and design utilities, students create mods for the immensely popular computer game Minecraft. Students use MCreator (<http://mcreator.pylo.si/>) to design, build, and test their own custom mods.

Topics include using mods to create new 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.

Alice: Creating 3D Worlds

Grades 5-6

Alice (<http://www.alice.org>) is an object-oriented, 3D programming environment developed at Carnegie Mellon University. This is an introduction to Alice and emphasizes creativity and technology.

Students use Alice to build 3D storybook worlds and to control advanced interactions and animations of 3D models, using basic conditional programming.

Topics include objects, events, logic, control structures, and orienting and moving 3D images.

GameMaker: Studio

Grades 5-6

Students learn object-oriented programming by designing, creating, and debugging games with GameMaker: Studio (<http://www.yoyogames.com>). Students create and script worlds, objects, graphics, and sounds.

Topics include objects, loops, variables, conditions, collision detection, scope, pathfinding, physics, and data structures.

Students create multi-platform games for their final projects.

Mobile Games

Grades 5-6

Students learn the fundamentals of programming as they create games for tablets and smartphones in the Stencyl programming environment.

Projects include platforming games, action games, battle games, and role-playing games. Students export games to PC and Android mobile devices.

Programming topics include variables, scripting, triggers, 2D graphics, actors and scenes, sound, and multiplatform compatibility.

JavaScript

Grades 5-6

Students learn the foundations of programming and logical thinking by writing programs and simple games in JavaScript. This primer is geared towards ambitious students with no previous coding experience.

Topics include variables, computer math, input and output, arrays, loops, graphics, and functions. Students will write a game and design its graphics as a final project.

Greenfoot Java

Grades 5-6

Students learn the basics of object-oriented programming and the Java programming language in Greenfoot (<http://www.greenfoot.org>), a student-friendly programming interface.

Topics include variables, computer math, control structures, classes, methods, inheritance, abstraction, and polymorphism. Activities include ecosystem simulations and simple games.

As final projects, students design, program, and publish their own games and simulations.

Minecraft Mods with Java

Grades 5-6

Using programming and design utilities, students create modifications to the computer game Minecraft.

Students learn basic Java programming in the context of designing, implementing, and customizing mods. No previous coding experience is required.

Topics include using mods to create new 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.

Game Programming

Grades 7-9

Students write games using BlitzPlus (<http://www.blitzbasic.com>).

Topics include variables, control structures, loops, functions, arrays, types, programming style, and graphics.

Students create, move, scale, and rotate images and shapes. They work individually or in pairs and write a simple game as the final project.

App Inventor

Grades 7-9

Students create apps and games for Android phones and tablets using MIT App Inventor (<http://appinventor.mit.edu/>).

Topics include running apps on Android, user interfaces, variables, control structures, I/O, importing libraries, and graphics.

3D Indie Games

Grades 7-9

Students design and program 3D games using the Unity 5 game engine, a popular indie game development tool.

Topics include scripting, graphics, objects, terrain, and levels. Students use open source digital assets and also create their own graphics and sounds.

As a final project, students design and create their own multi-platform games.

Xbox Development

Grades 7-9

Students write simple games for the Xbox and Windows using C#, Visual Studio Express, and XNA.

The first week introduces C# and the .NET Framework. Topics include variables, types, control structures, classes, objects, and collections.

The second week introduces 2D game development using XNA. Topics include sprite graphics, game controller input, audio output, game engines, simple AI, and exporting to the Xbox 360.

Small Java

Grades 7-9

Small Java prepares students for Java-based high school computer science.

Topics include constants, types, variables, operators, expressions, the main() method, String objects, simple classes, member methods, conditions, loops, String manipulation, parameters, variable scope, console programs vs. GUI programs, and practice projects. The course uses the BlueJ IDE (<http://www.bluej.org>).

JavaScript and JQuery

Grades 7-9

Students learn the JavaScript language and how to use JavaScript and the jQuery library to write scripts for web pages.

Topics include JavaScript variables, control structures, objects, functions, and the JavaScript debugger. Students learn how to use the jQuery library to select and modify DOM elements. They also explore functional programming concepts including functions as first-class objects, closures, and callbacks.

Projects include simple games and animated web pages written in JavaScript.

Python on Linux

Grades 7-9

This is an introduction to programming and open source software using the Python programming language.

Python topics include variables, control structures, arrays, functions, and classes. Students learn how to use the Linux command line to manage files, run Python programs, and create shell scripts.

Projects include simple command line utilities and text-based games. Students also download, experiment with, and examine the code of an open source Python project of their choosing.

ART AND DESIGN

Drawing

Grades 3-4 & Grades 5-6

This is a course for beginners and teaches drawing as a foundation for all forms of visual expression.

Topics include sketches, shapes, angles, perspective, horizon, vanishing points, reflections, contrast, shadows, light effects, and composition.

Exercises include still life drawings, portraits, landscapes, and cartoons.

Materials are provided and include specialized pencils, sketch pads, drawing boards, and drawing tools.

Painting

Grades 3-4 & Grades 5-6

This course introduces both tempera and watercolor painting.

Activities include structural drawings, value sketches, one-color paintings, three-color paintings, and tempera paintings.

Materials are provided and include student-grade paints, brushes, palettes, a variety of paper, and assorted tools.

Digital Design

Grades 3-4

Students explore universal design principles by creating digital art in a variety of media.

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

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

For a final project, students customize Minecraft, a popular computer game, with their own original digital art.

Graphic Design

Grades 5-6

Students learn how to execute sophisticated single-page design projects using universal design principles, layout pads, and Adobe Photoshop Elements.

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

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

Architectural Design

Grades 5-6

Students learn about architecture and about Google SketchUp, a free digital drafting software package.

Architecture topics include the history of residential architecture, international housing styles, and form and function in residential design.

Students practice 2D drafting and 3D modeling. As a final project, each student creates and presents his or her “dream house” using Google SketchUp.

HTML5 Web Pages

Grades 5-6

Students learn HTML5 and create their own web pages.

Topics include the structure of a web page, HTML tags, HTML attributes, hyperlinks, CSS styles, and HTML5 elements and attributes.

Students use digital cameras, Paint.NET, and GIMP to create images for the web.

As a final project, each student creates and publishes a small website.

Photography Projects

Grades 5-6

This is a beginner-level introduction to DSLR photography.

Topics include camera operation, photographic genres, the history of photography, composition, lens selection, exposure modes, and basic image editing.

Projects include architectural photography, landscapes, environmental portraits, nature photography, journalistic photo-essays, macro photography, and product photography.

HTML5 Web Design

Grades 7-9

Students learn basic web design principles and write and style web pages using HTML5 and CSS.

Design topics include colors, alignment, contrast, fonts, images, white space, navigation, and usability.

Students learn to import and embed CSS and media files. They experiment with new HTML5 features, and author pages using open source tools: Notepad++ and GIMP. For a final project, each student creates and publishes a small website.

Game Art

Grades 7-9

Students create and design art for video games. Beginning with basic vector art techniques and investigating the different artistic roles on a video game development team, students use InkScape to create concept, character, environment, and marketing art. They analyze the art of influential classic and modern games.

Vector art topics include creating and manipulating shapes and objects, applying textures, and using brushes. Activities include creating graphics and art for a pre-made game and digitizing sketches.

As a final project, students create storyboards and art for their own game idea and present the portfolio.

Game Design & Modding

Grades 7-9

Students “mod” (customize) commercial video games with their own graphics, sounds, unit definitions, maps, and scripts.

The first week students mod the strategy game Civilization IV by inventing new units and technologies, and by altering combat rules and map generation logic.

The second week, students create modules for the 3D physics sandbox Garry’s Mod, designing objects, levels, environments, obstacle courses, and minigames.

Role-Playing Game Design

Grades 7-9

Students design their own role-playing games using RPG Maker VX Ace.

Instruction emphasizes crafting visual, audio, and storytelling components to create compelling adventures.

Topics include scripting, data management, game balancing, storytelling, graphic design, sprites and tilesets, and the design process. Students share and publish their projects.

Fashion Design

Grades 7-9

Using both traditional and digital techniques, students design their own clothing and accessories. The first week, students learn basic principles of hand-drawn fashion design, including drawing strokes, color balance, texture, croquis, garment and accessory categorization, poses, and historical trends. They use light boxes and art supplies to create designs using both hand-drawn figures and premade templates.

The second week, students apply these concepts and skills using the vector-drawing program InkScape. They use layers, colors, shapes, and shading to create a virtual fashion line. As a final project, students assemble their designs into a portfolio.

Photography

Grades 7-9

Students learn digital SLR photography starting with basic camera operation.

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

Exercises emphasize exposure, composition, color, and lighting. Students achieve artistic effects by manually controlling the components of exposure: aperture, shutter speed, and ISO.

The Summer Program provides Canon EOS DSLR cameras for students to use.



“Our design courses help well-rounded students develop artistic and analytical skills.”

Fatima Pineda
Art and Design Instructor



FILMMAKING

Filmmaking

Grades 3-4 & Grades 5-6

Students learn how to plan, write, shoot, edit and complete post-production for digital video short films.

With the guidance of instructors, students brainstorm ideas for a short film, write an original script, and create a shot list and storyboard.

Students shoot their film using a tripod, a Panasonic DVX-100B video camera, a boom microphone, and (optionally) a lighting kit.

Students edit their film using iMovie, add music and credits, complete post-production, and export the film to a private Vimeo account for home viewing.



Stop-Motion Animation

Grades 3-4 & Grades 5-6

Students use still cameras, audio recorders, and iMovie to create stop-motion animation films. These can be narrative (scripted) or experimental videos created from LEGO blocks, modeling clay, action figures, and other “found objects”.

This introductory course covers the basics of using household objects and miniature construction to create a compelling story. The course provides an overview of photography, sound recording, and video editing as part of the filmmaking process.

Digital Animation

Grades 5-6

This course teaches basic animation techniques using Blender animation software.

Students model objects and characters using ‘Nurbs’ rig characters for movement, light scenes, apply textures and colors to models, and animate models.

Final projects include animated 3D characters and 3D environments.

DSLR Video

Grades 5-6

Students write, shoot, and edit videos for the web using DSLR cameras, a variety of sound and lighting equipment, and Adobe Premier Elements.

Production topics include DSLR video operation, creative selection of focal length and depth of field, focus pulling, sound capture with external mics, and simple lighting setups.

Projects include interviews, comic sketches, instructional videos, and vlogs.

Video Production

Grades 7-9

Students shoot and complete rough edits of films based on scripts from script-writing classes and other sources.

The class begins with readings and exercises that cover working with actors, script analysis, storyboarding and shot listing, location scouting, camera operation, lighting, and sound technique.

The majority of the course is devoted to group production of a short DV film.

Students export rough edits to private Vimeo accounts for home viewing.

Web Video

Grades 7-9

Students plan, write, edit, and share a variety of genres of web video including parodies, advertorials, product reviews, vlogs, and tutorials.

Production concepts include location scouting, interviewing, B-roll footage, green screen effects, incorporating digital images and screenshots, and multi-cam setups.

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

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Dee Kiewel, Herndon



"It's very rewarding to help students achieve their individual goals through online tutoring."
Amanda Loeser
Writing Tutor

AFTER SCHOOL CLASSES

After School Enrichment

Fairfax Collegiate works with over 40 PTAs to bring enrichment classes to schools across Northern Virginia.

After school courses include robotics, public speaking, writing, filmmaking, and programming.

Most after school classes are taught by summer program instructors with summer program curricula.

Classes have twelve students or fewer. Fairfax Collegiate provides all materials, supplies, and equipment.

To learn more, please visit www.Fairfax-Collegiate.com/afterschool.



ALEXANDRIA AND FALLS CHURCH SCHEDULES

Alexandria^{D†}: Beth El Hebrew Congregation, 3830 Seminary Rd., Alexandria, VA 22304

Session II: Jul 11-Jul 22

Morning

Writing Fundamentals 3-4
Public Speaking 3-4
Intro to Engineering 3-4
Brain Games 5-6
Drawing 5-6
Digital Animation 5-6
Middle School Debate 7-9
EV3 Robotic Vehicles 7-9
Small Java 7-9

Afternoon

Math Games 3-4
Intro to Robotics 3-4
Drawing 3-4
Creative Writing 5-6
Elementary Debate 5-6
Greenfoot Java 5-6
Intro to Algebra 7-9
TJ Exam Prep 7-8
Role-Playing Game Design 7-9

Session III: Jul 25-Aug 5

Morning

Fairfax Collegiate Math 3-4
Robotics Zoo 3-4
Filmmaking 3-4
Writing Skills & Grammar 5-6
EV3 Robotics Engineering 5-6
JavaScript 5-6
Intro to Geometry 7-9
Newtonian Physics 7-9
Game Design & Modding 7-9

Afternoon

Story Writing 3-4
Spy Science 3-4
Digital Design 3-4
Fairfax Collegiate Math 5-6
HTML5 Web Pages 5-6
Filmmaking 5-6
Writers' Workshop 7-9
EV3 Robotics Combat 7-9
Genetics 7-9

Session IV: Aug 8-Aug 19

Morning

Writing Fundamentals 3-4
Robots in Space 3-4
Stop-Motion Animation 3-4
Strategic Reading 5-6
Alice- Creating 3D Worlds 5-6
Electronics 5-6
Intro to Algebra 7-9
Forensic Science 7-9
TJ Exam Prep 7-8

Afternoon

Word Problems 3-4
Minecraft Modding 3-4
Robotics Zoo 3-4
Forensic Science 5-6
Stop-Motion Animation 5-6
Computer Math 5-6
Mock Trial 7-9
TJ SIS Essay Prep 7-9
High School Writing 7-9

Session V: Aug 22-Sep 2

Morning

Math Fundamentals 3-4
Persuasive Speaking 3-4
Minecraft Engineering 3-4
Writing Skills & Grammar 5-6
EV3 Robotics Olympiad 5-6
Alice- Creating 3D Worlds 5-6
Intro to Pre-Algebra 6-8
Model UN 7-9
JavaScript & jQuery 7-9

Afternoon

Reading Reinforcement 3-4
Scratch with WeDo 3-4
Construction Engineering 3-4
Fairfax Collegiate Math 5-6
Elementary Debate 5-6
Python Programming 5-6
Reading for Meaning 7-9
EV3 Competitive Robotics 7-9
PSAT-SAT Prep 7-9

Falls Church: St. Katherine Greek Orthodox Church, 3149 Glen Carlyn Rd., Falls Church, VA 22041

2016 Location Discount

Register before May 1 and save \$100 per full-day session and \$50 per half-day session at this location.

Session II: Jul 11-Jul 22

Morning

Writing and Revising 3-4
Robots in Space 3-4
Digital Design 3-4
Fairfax Collegiate Math 5-6
Speech 5-6
GameMaker Studio 5-6
Intro to Pre-Algebra 6-8
Forensic Science 7-9
Arduino Electronics 7-9

Afternoon

Fairfax Collegiate Math 3-4
Small Basic 3-4
The Scientific Method 3-4
Writing Skills & Grammar 5-6
EV3 Robotics Platform 5-6
Forensic Science 5-6
Reading for Meaning 7-9
PSAT-SAT Prep 7-9
Game Design & Modding 7-9

Session III: Jul 25-Aug 5

Morning

Math Fundamentals 3-4
Persuasive Speaking 3-4
Kodu Programming 3-4
Strategic Reading 5-6
EV3 with Python 5-6
Painting 5-6
Middle School Debate 7-9
TJ Exam Prep 7-8
HTML5 Web Design 7-9

Afternoon

Reading Reinforcement 3-4
Painting 3-4
Space Exploration 3-4
Cryptography 5-6
Rhetoric 5-6
GameMaker Studio 5-6
Intro to Algebra 7-9
EV3 with Java 7-9
TJ SIS Essay Prep 7-9

Session IV: Aug 8-Aug 19

Morning

Reading Reinforcement 3-4
Construction Robots 3-4
Spy Science 3-4
Fairfax Collegiate Math 5-6
Python Programming 5-6
Filmmaking 5-6
Intro to Geometry 7-9
EV3 Robotics Combat 7-9
App Inventor 7-9

Afternoon

Math Games 3-4
Filmmaking 3-4
Intro to Engineering 3-4
The Writing Process 5-6
Mobile Games 5-6
Architectural Design 5-6
Writers' Workshop 7-9
JavaScript and jQuery 7-9
Animal Physiology 7-9

Session V: Aug 22-Sep 2

Morning

Writing Fundamentals 3-4
Public Speaking 3-4
Small Basic 3-4
Problem Solving 5-6
Alice- Creating 3D Worlds 5-6
Prototyping & 3D Printing 5-6
Intro to Algebra 7-9
TJ SIS Essay Prep 7-9
Biomedical Engineering 7-9

Afternoon

Fairfax Collegiate Math 3-4
Robotics Zoo 3-4
Chemistry Concepts 3-4
Creative Writing 5-6
Minecraft Mods with Java 5-6
Civil Engineering 5-6
Elements of Style 7-9
TJ Exam Prep 7-8
Inventing & 3D Printing 7-9

^DDietary Restrictions at this facility. Please do not bring meat or shell fish. Lunches may include dairy products and tuna fish. Questions? Please call 703 481-3080.

[†]Indoor break location. The supervised twenty-minute morning and afternoon breaks are indoors at these facilities.

MCLEAN AND VIENNA SCHEDULES

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

Session I: Jun 27-Jul 8

Morning

The Writing Process 5-6
EV3 Robotics Platform 5-6
Minecraft Mods with Java 5-6
Filmmaking 5-6
Probability and Statistics 7-9
App Inventor 7-9
Lasers 7-9
TJ Exam Prep 7-8

Afternoon

Fairfax Collegiate Math 5-6
Mobile Games 5-6
Graphic Design 5-6
Siege Engines 5-6
Dystopian Futures 7-9
EV3 Robotic Vehicles 7-9
TJ SIS Essay Prep 7-9
Video Production 7-9

Session II: Jul 11-Jul 22

Morning

Cryptography 5-6
JavaScript 5-6
Physics 5-6
HTML5 Web Pages 5-6
Writers' Workshop 7-9
Middle School Debate 7-9
EV3 Robotics Combat 7-9
TJ Exam Prep 7-8

Afternoon

Creative Writing 5-6
Rhetoric 5-6
EV3 Mobile Robotics 5-6
Electronics 5-6
Intro to Algebra 7-9
Game Programming 7-9
Neuroscience 7-9
Game Art 7-9

Session III: Jul 25-Aug 5

Morning

Fairfax Collegiate Math 5-6
EV3 Robotics Olympiad 5-6
Python Programming 5-6
Civil Engineering 5-6
Reading for Meaning 7-9
Mock Trial 7-9
Xbox Development 7-9
Fashion Design 7-9

Afternoon

Writing Skills & Grammar 5-6
Speech 5-6
EV3 Robotics Engineering 5-6
Alice- Creating 3D Worlds 5-6
Intro to Geometry 7-9
JavaScript and jQuery 7-9
PSAT-SAT Prep 7-9
Role-Playing Game Design 7-9

Session IV: Aug 8-Aug 19

Morning

Brain Games 5-6
Speech 5-6
EV3 Robotics Engineering 5-6
Digital Animation 5-6
Elements of Style 7-9
3D Indie Games 7-9
Photography 7-9
Web Video 7-9

Afternoon

Reading Newbery Winners 5-6
GameMaker Studio 5-6
Photography Projects 5-6
DSLR Video 5-6
Intro to Algebra 7-9
Model UN 7-9
VEX Robotics 7-9
TJ Exam Prep 7-8

Session V: Aug 22-Sep 2

Morning

Fairfax Collegiate Math 5-6
Elementary Debate 5-6
EV3 Robotics Platform 5-6
Mobile Games 5-6
Writers' Workshop 7-9
Forensic Science 7-9
Game Design & Modding 7-9
Arduino Electronics 7-9

Afternoon

Strategic Reading 5-6
Forensic Science 5-6
Architectural Design 5-6
HTML5 Web Pages 5-6
Intro to Pre-Algebra 6-8
Middle School Debate 7-9
VEX Robotics 7-9
App Inventor 7-9

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

Session I: Jun 27-Jul 8

Morning

Writing and Revising 3-4
Public Speaking 3-4
Robotics Zoo 3-4
Drawing 3-4
Fairfax Collegiate Math 5-6
EV3 with Python 5-6
Stop-Motion Animation 5-6
Civil Engineering 5-6
Electronics 5-6

Afternoon

Word Problems 3-4
Robots in Space 3-4
Stop-Motion Animation 3-4
Space Exploration 3-4
Writing Skills & Grammar 5-6
Elementary Debate 5-6
EV3 Robotics Olympiad 5-6
Greenfoot Java 5-6
Drawing 5-6

Session II: Jul 11-Jul 22

Morning

Reading Reinforcement 3-4
Persuasive Speaking 3-4
Construction Robots 3-4
Scratch with WeDo 3-4
Painting 3-4
Computer Math 5-6
EV3 Robotics Engineering 5-6
Science Olympiad 5-6
HTML5 Web Pages 5-6

Afternoon

Math Fundamentals 3-4
Intro to Robotics 3-4
Kodu Programming 3-4
Science Olympiad 3-4
Strategic Reading 5-6
Speech 5-6
EV3 Robotics Platform 5-6
GameMaker Studio 5-6
Painting 5-6

Session III: Jul 25-Aug 5

Morning

Fairfax Collegiate Math 3-4
Public Speaking 3-4
Robots in Space 3-4
Chemistry Concepts 3-4
Filmmaking 3-4
Writing Seminar 5-6
Python Programming 5-6
Human Biology & Anatomy 5-6
Architectural Design 5-6

Afternoon

Writing Fundamentals 3-4
Robotics Zoo 3-4
Minecraft Modding 3-4
Intro to Engineering 3-4
Problem Solving 5-6
Elementary Debate 5-6
EV3 Mobile Robotics 5-6
Minecraft Mods with Java 5-6
Filmmaking 5-6

OAKTON AND FAIRFAX SCHEDULES

Oakton: Pinnacle Academy, 2854 Hunter Mill Rd., Oakton, VA 22124

Session I: Jun 27-Jul 8

Morning

Creative Writing 5-6
Speech 5-6
Greenfoot Java 5-6
Intro to Geometry 7-9
VEX Robotics 7-9
Web Video 7-9

Afternoon

Brain Games 5-6
EV3 Robotics Engineering 5-6
DSLr Video 5-6
Elements of Style 7-9
Mock Trial 7-9
Small Java 7-9

Session II: Jul 11-Jul 22

Morning

The Writing Process 5-6
Human Biology & Anatomy 5-6
Graphic Design 5-6
Intro to Pre-Algebra 6-8
3D Indie Games 7-9
TJ Exam Prep 7-8

Afternoon

Cryptography 5-6
EV3 Robotics Olympiad 5-6
Python Programming 5-6
High School Writing 7-9
Lasers 7-9
Game Art 7-9

Session III: Jul 25-Aug 5

Morning

Writing Skills & Grammar 5-6
Photography Projects 5-6
Digital Animation 5-6
Intro to Algebra 7-9
Game Programming 7-9
TJ SIS Essay Prep 7-9

Afternoon

Computer Math 5-6
Alice- Creating 3D Worlds 5-6
Siege Engines 5-6
Writers' Workshop 7-9
TJ Exam Prep 7-8
Photography 7-9

Session IV: Aug 8-Aug 19

Morning

Writing Skills & Grammar 5-6
EV3 Robotics Engineering 5-6
JavaScript 5-6
Probability and Statistics 7-9
Game Design & Modding 7-9
Raspberry Pi Projects 7-9

Afternoon

Fairfax Collegiate Math 5-6
Elementary Debate 5-6
Intro to Raspberry Pi 5-6
Reading for Meaning 7-9
EV3 Competitive Robotics 7-9
HTML5 Web Design 7-9

Fairfax^D: Geshur Jewish Day School, 4800 Mattie Moore Ct., Fairfax, VA 22030

Session I: Jun 27-Jul 8

Morning

Writing Fundamentals 3-4
Persuasive Speaking 3-4
Science Olympiad 3-4
Computer Math 5-6
EV3 Robotics Olympiad 5-6
EV3 Mobile Robotics 5-6
Intro to Algebra 7-9
Model UN 7-9
Xbox Development 7-9

Afternoon

Math Fundamentals 3-4
Intro to Robotics 3-4
Scratch with WeDo 3-4
Writing Skills and Grammar 5-6
GameMaker Studio 5-6
Science Olympiad 5-6
Writers' Workshop 7-9
Middle School Debate 7-9
Game Art 7-9

Session II: Jul 11-Jul 22

Morning

Minecraft Modding 3-4
Chemistry Concepts 3-4
Construction Engineering 3-4
Strategic Reading 5-6
Mobile Games 5-6
ESL 5-6
EV3 with Java 7-9
PSAT-SAT Prep 7-9
HTML5 Web Design 7-9

Afternoon

Public Speaking 3-4
Robotics Zoo 3-4
Space Exploration 3-4
EV3 with Python 5-6
Architectural Design 5-6
Civil Engineering 5-6
Contest Math 7-9
App Inventor 7-9
ESL 7-9

Session III: Jul 25-Aug 5

Morning

Reading Reinforcement 3-4
Persuasive Speaking 3-4
Filmmaking 3-4
Fairfax Collegiate Math 5-6
EV3 Robotics Platform 5-6
ESL 5-6
Intro to Geometry 7-9
Small Java 7-9
Inventing and 3D Printing 7-9

Afternoon

Word Problems 3-4
Robots in Space 3-4
Minecraft Engineering 3-4
Reading Newbery Winners 5-6
Filmmaking 5-6
Prototyping & 3D Printing 5-6
Epic Fantasy 7-9
ESL 7-9
Biomedical Engineering 7-9

Session IV: Aug 8-Aug 19

Morning

Fairfax Collegiate Math 3-4
Construction Robots 3-4
Painting 3-4
Creative Writing 5-6
Rhetoric 5-6
Physics 5-6
High School Writing 7-9
Game Programming 7-9
TJ Exam Prep 7-8

Afternoon

Writing and Revising 3-4
The Scientific Method 3-4
Intro to Engineering 3-4
Problem Solving 5-6
Greenfoot Java 5-6
Painting 5-6
Intro to Pre-Algebra 6-8
Middle School Debate 7-9
Fashion Design 7-9

2016 Location Discount

Register before May 1 and save \$100 per full-day session and \$50 per half-day session at this location.

^DDietary Restrictions at this facility. Please do not bring meat or shell fish. Lunches may include dairy products and tuna fish. Questions? Please call 703 481-3080.

[#]Indoor break location. The supervised twenty-minute morning and afternoon breaks are indoors at these facilities.

CHANTILLY AND DULLES SCHEDULES

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

Session I: Jun 27-Jul 8

Morning

Writing and Revising 3-4
Robotics Zoo 3-4
Minecraft Modding 3-4
Speech 5-6
Filmmaking 5-6
Intro to Raspberry Pi 5-6
Game Programming 7-9
Genetics 7-9
Photography 7-9

Afternoon

Intro to Engineering 3-4
Filmmaking 3-4
Construction Robots 3-4
Photography Projects 5-6
Reading Newbery Winners 5-6
Python Programming 5-6
Intro to Geometry 7-9
Raspberry Pi Projects 7-9
TJ Exam Prep 7-8

Session II: Jul 11-Jul 22

Morning

Writing Fundamentals 3-4
Robots in Space 3-4
Scratch with WeDo 3-4
The Writing Process 5-6
Stop-Motion Animation 5-6
Siege Engines 5-6
Intro to Algebra 7-9
Python on Linux 7-9
Animal Physiology 7-9

Afternoon

Math Games 3-4
Intro to Robotics 3-4
Stop-Motion Animation 3-4
Fairfax Collegiate Math 5-6
Alice- Creating 3D Worlds 5-6
Human Biology & Anatomy 5-6
Elements of Style 7-9
Mock Trial 7-9
Game Design and Modding 7-9

Session III: Jul 25-Aug 5

Morning

Story Writing 3-4
Construction Robots 3-4
Construction Engineering 3-4
Creative Writing 5-6
EV3 Robotics Olympiad 5-6
GameMaker Studio 5-6
Intro to Pre-Algebra 6-8
3D Indie Games 7-9
TJ Exam Prep 7-8

Afternoon

Fairfax Collegiate Math 3-4
Intro to Robotics 3-4
Kodu Programming 3-4
Brain Games 5-6
Speech 5-6
EV3 Mobile Robotics 5-6
Reading for Meaning 7-9
VEX Robotics 7-9
Neuroscience 7-9

Session IV: Aug 8-Aug 19

Morning

Writing Fundamentals 3-4
Persuasive Speaking 3-4
Digital Design 3-4
Drawing 3-4
Fairfax Collegiate Math 5-6
EV3 Robotics Engineering 5-6
Forensic Science 5-6
Filmmaking 5-6
Writers' Workshop 7-9
EV3 Robotics Combat 7-9
Small Java 7-9
TJ Exam Prep 7-8

Afternoon

Math Fundamentals 3-4
Robotics Zoo 3-4
Scratch with WeDo 3-4
Filmmaking 3-4
Writing Skills & Grammar 5-6
Elementary Debate 5-6
Minecraft Mods with Java 5-6
Drawing 5-6
Intro to Algebra 7-9
Forensic Science 7-9
TJ SIS Essay Prep 7-9
Role-Playing Game Design 7-9

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

Session I: Jun 27-Jul 8

Morning

Robots in Space 3-4
Scratch with WeDo 3-4
The Scientific Method 3-4
Fairfax Collegiate Math 5-6
Forensic Science 5-6
Architectural Design 5-6
Intro to Pre-Algebra 6-8
Reading for Meaning 7-9
Small Java 7-9

Afternoon

Fairfax Collegiate Math 3-4
Digital Design 3-4
Minecraft Engineering 3-4
Strategic Reading 5-6
Elementary Debate 5-6
Alice- Creating 3D Worlds 5-6
EV3 Robotics Combat 7-9
Forensic Science 7-9
Arduino Electronics 7-9

Session II: Jul 11-Jul 22

Morning

Reading Reinforcement 3-4
Word Problems 3-4
Robotics Zoo 3-4
Speech 5-6
HTML5 Web Pages 5-6
Filmmaking 5-6
Writers' Workshop 7-9
App Inventor 7-9
TJ Exam Prep 7-8

Afternoon

Persuasive Speaking 3-4
Spy Science 3-4
Filmmaking 3-4
Writing Skills & Grammar 5-6
EV3 Mobile Robotics 5-6
JavaScript 5-6
Intro to Geometry 7-9
TJ SIS Essay Prep 7-9
HTML5 Web Design 7-9

Session III: Jul 25-Aug 5

Morning

Writing Fundamentals 3-4
Robots in Space 3-4
Small Basic 3-4
Cryptography 5-6
Rhetoric 5-6
Drawing 5-6
High School Writing 7-9
EV3 Competitive Robotics 7-9
Game Art 7-9

Afternoon

Math Games 3-4
Public Speaking 3-4
Drawing 3-4
The Writing Process 5-6
EV3 Robotics Platform 5-6
Electronics 5-6
Probability and Statistics 7-9
Middle School Debate 7-9
Game Programming 7-9

RESTON AND HERNDON SCHEDULES

Reston^{D†}: Northern Virginia Hebrew Congregation, 1441 Wiehle Ave., Reston, VA 20190

Session I: Jun 27-Jul 8

Morning

Public Speaking 3-4
Small Basic 3-4
Filmmaking 3-4
The Writing Process 5-6
EV3 Robotics Engineering 5-6
Architectural Design 5-6
Intro to Algebra 7-9
TJ Exam Prep 7-8
Game Design & Modding 7-9

Afternoon

Reading Reinforcement 3-4
Intro to Robotics 3-4
Digital Design 3-4
Fairfax Collegiate Math 5-6
Elementary Debate 5-6
Alice- Creating 3D Worlds 5-6
Python on Linux 7-9
Animal Physiology 7-9
Video Production 7-9

Session II: Jul 11-Jul 22

Morning

Fairfax Collegiate Math 3-4
Kodu Programming 3-4
Construction Engineering 3-4
Writing Skills and Grammar 5-6
EV3 with Python 5-6
Civil Engineering 5-6
Intro to Geometry 7-9
TJ Exam Prep 7-8
Arduino Electronics 7-9

Afternoon

Writing Fundamentals 3-4
Construction Robots 3-4
The Scientific Method 3-4
Problem Solving 5-6
Python Programming 5-6
Graphic Design 5-6
Reading for Meaning 7-9
EV3 with Java 7-9
TJ SIS Essay Prep 7-9

Session III: Jul 25-Aug 5

Morning

Writing and Revising 3-4
Robotics Zoo 3-4
Intro to Engineering 3-4
Brain Games 5-6
Filmmaking 5-6
Intro to Raspberry Pi 5-6
Writers' Workshop 7-9
Game Programming 7-9
HTML5 Web Design 7-9

Afternoon

Math Games 3-4
Chemistry Concepts 3-4
Filmmaking 3-4
Reading Newbery Winners 5-6
EV3 Robotics Engineering 5-6
HTML5 Web Pages 5-6
Intro to Pre-Algebra 6-8
Model UN 7-9
Raspberry Pi Projects 7-9

Session IV: Aug 8-Aug 19

Morning

Word Problems 3-4
Intro to Robotics 3-4
Scratch with WeDo 3-4
The Writing Process 5-6
Speech 5-6
Science Olympiad 5-6
Intro to Algebra 7-9
EV3 Robotic Vehicles 7-9
Genetics 7-9

Afternoon

Reading Reinforcement 3-4
Persuasive Speaking 3-4
Science Olympiad 3-4
Cryptography 5-6
EV3 Robotics Platform 5-6
Greenfoot Java 5-6
Elements of Style 7-9
Lasers 7-9
PSAT-SAT Prep 7-9

Session V: Aug 22-Sep 2

Morning

Writing Fundamentals 3-4
Minecraft Modding 3-4
Intro to Engineering 3-4
Fairfax Collegiate Math 5-6
EV3 Mobile Robotics 5-6
Human Biology & Anatomy 5-6
High School Writing 7-9
Small Java 7-9
TJ Exam Prep 7-8

Afternoon

Fairfax Collegiate Math 3-4
Robotics Zoo 3-4
Spy Science 3-4
Writing Skills & Grammar 5-6
GameMaker Studio 5-6
Graphic Design 5-6
Intro to Geometry 7-9
Middle School Debate 7-9
EV3 Robotics Combat 7-9

Herndon: St. Joseph Parish Hall, 750 Peachtree St., Herndon, VA 20170

Session II: Jul 11-Jul 22

Morning

Elementary Debate 5-6
Greenfoot Java 5-6
ESL 5-6
Prototyping & 3D Printing 5-6
Intro to Algebra 7-9
Web Video 7-9
Biomedical Engineering 7-9

Afternoon

Writing Seminar 5-6
EV3 Robotics Engineering 5-6
DSLR Video 5-6
Model UN 7-9
ESL 7-9
Fashion Design 7-9
Inventing & 3D Printing 7-9

Session III: Jul 25-Aug 5

Morning

Strategic Reading 5-6
EV3 Mobile Robotics 5-6
Mobile Games 5-6
ESL 5-6
Intro to Geometry 7-9
Forensic Science 7-9
TJ Exam Prep 7-8

Afternoon

Fairfax Collegiate Math 5-6
Speech 5-6
Forensic Science 5-6
Writers' Workshop 7-9
EV3 Robotics Combat 7-9
App Inventor 7-9
ESL 7-9

Session IV: Aug 8-Aug 19

Morning

Writing Skills & Grammar 5-6
Elementary Debate 5-6
Alice- Creating 3D Worlds 5-6
ESL 5-6
Intro to Pre-Algebra 6-8
Xbox Development 7-9
Newtonian Physics 7-9

Afternoon

Brain Games 5-6
Python Programming 5-6
Electronics 5-6
Reading for Meaning 7-9
Neuroscience 7-9
TJ Exam Prep 7-8
ESL 7-9

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[†]Indoor break location. The supervised twenty-minute morning and afternoon breaks are indoors at these facilities.

ASHBURN AND LEESBURG SCHEDULES

Ashburn - East[†]: Loudoun School for the Gifted, 44675 Cape Ct., Ashburn, VA 20147

Session II: Jul 11-Jul 22

Morning

Math Fundamentals 3-4
Minecraft Modding 3-4
Reading Newbery Winners 5-6
Alice- Creating 3D Worlds 5-6
Intro to Raspberry Pi 5-6
Epic Fantasy 7-9
VEX Robotics 7-9
Loudoun AOS Prep 7-9

Afternoon

Writing Fundamentals 3-4
Construction Robots 3-4
Problem Solving 5-6
Speech 5-6
Minecraft Mods with Java 5-6
Probability and Statistics 7-9
Genetics 7-9
Raspberry Pi Projects 7-9

Session III: Jul 25-Aug 5

Morning

Writing and Revising 3-4
Robots in Space 3-4
Brain Games 5-6
Elementary Debate 5-6
Physics 5-6
Contest Math 7-9
EV3 Robotic Vehicles 7-9
Game Programming 7-9

Afternoon

Word Problems 3-4
Persuasive Speaking 3-4
Writing Skills & Grammar 5-6
Greenfoot Java 5-6
Architectural Design 5-6
Elements of Style 7-9
Animal Physiology 7-9
Arduino Electronics 7-9

Session IV: Aug 8-Aug 19

Morning

Fairfax Collegiate Math 3-4
Minecraft Engineering 3-4
The Writing Process 5-6
GameMaker Studio 5-6
HTML5 Web Pages 5-6
Intro to Geometry 7-9
Mock Trial 7-9
EV3 with Java 7-9

Afternoon

Story Writing 3-4
Chemistry Concepts 3-4
Fairfax Collegiate Math 5-6
EV3 with Python 5-6
Siege Engines 5-6
Writers' Workshop 7-9
Python on Linux 7-9
Game Art 7-9

2016 Location Discount

Register before May 1 and save \$100 per full-day session and \$50 per half-day session at this location.

Ashburn - West: St. Theresa Catholic School, 21370 St. Theresa Ln., Ashburn, VA 20147

Session I: Jun 27-Jul 8

Morning

Fairfax Collegiate Math 3-4
Public Speaking 3-4
Space Exploration 3-4
Problem Solving 5-6
GameMaker Studio 5-6
Painting 5-6
Writers' Workshop 7-9
Neuroscience 7-9
HTML5 Web Design 7-9

Afternoon

Writing Fundamentals 3-4
Robots in Space 3-4
Painting 3-4
Creative Writing 5-6
Rhetoric 5-6
Physics 5-6
Intro to Algebra 7-9
EV3 with Java 7-9
Loudoun AOS Prep 7-9

Session II: Jul 11-Jul 22

Morning

Reading Reinforcement 3-4
Intro to Robotics 3-4
Chemistry Concepts 3-4
Fairfax Collegiate Math 5-6
Elementary Debate 5-6
EV3 Robotics Engineering 5-6
Intro to Geometry 7-9
Xbox Development 7-9
Photography 7-9

Afternoon

Word Problems 3-4
Robotics Zoo 3-4
Intro to Engineering 3-4
Writing Skills & Grammar 5-6
Photography Projects 5-6
Electronics 5-6
High School Writing 7-9
Model UN 7-9
EV3 Robotics Combat 7-9

Session III: Jul 25-Aug 5

Morning

Fairfax Collegiate Math 3-4
Science Olympiad 3-4
Digital Design 3-4
The Writing Process 5-6
Forensic Science 5-6
DSLR Video 5-6
Writers' Workshop 7-9
App Inventor 7-9
Loudoun AOS Prep 7-9

Afternoon

Writing Fundamentals 3-4
Robotics Zoo 3-4
Scratch with WeDo 3-4
Computer Math 5-6
Mobile Games 5-6
Science Olympiad 5-6
Intro to Pre-Algebra 6-8
Forensic Science 7-9
Web Video 7-9

Session IV: Aug 8-Aug 19

Morning

Math Games 3-4
Public Speaking 3-4
Robots in Space 3-4
Problem Solving 5-6
Speech 5-6
JavaScript 5-6
Reading for Meaning 7-9
Small Java 7-9
Video Production 7-9

Afternoon

Writing and Revising 3-4
Small Basic 3-4
Spy Science 3-4
Writing Skills and Grammar 5-6
EV3 Robotics Platform 5-6
Filmmaking 5-6
Intro to Algebra 7-9
Middle School Debate 7-9
Arduino Electronics 7-9

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Register before May 1 and save \$100 per full-day session and \$50 per half-day session at this location.

Leesburg: Loudoun Country Day School, 20600 Red Cedar Dr., Leesburg, VA 20175

Session II: Jul 11-Jul 22

Morning

Persuasive Speaking 3-4
Robots in Space 3-4
Small Basic 3-4
The Writing Process 5-6
Filmmaking 5-6
Siege Engines 5-6
Intro to Pre-Algebra 6-8
EV3 Competitive Robotics 7-9
Forensic Science 7-9

Afternoon

Spy Science 3-4
Filmmaking 3-4
Minecraft Engineering 3-4
Brain Games 5-6
EV3 Robotics Platform 5-6
Forensic Science 5-6
Writers' Workshop 7-9
Middle School Debate 7-9
JavaScript and jQuery 7-9

Session III: Jul 25-Aug 5

Morning

Reading Reinforcement 3-4
Public Speaking 3-4
Stop-Motion Animation 3-4
Problem Solving 5-6
Human Biology & Anatomy 5-6
Graphic Design 5-6
Intro to Algebra 7-9
Python on Linux 7-9
Arduino Electronics 7-9

Afternoon

Math Fundamentals 3-4
Construction Robots 3-4
The Scientific Method 3-4
Writing Skills and Grammar 5-6
Alice- Creating 3D Worlds 5-6
Stop-Motion Animation 5-6
Elements of Style 7-9
Lasers 7-9
Game Design and Modding 7-9

Session IV: Aug 8-Aug 19

Morning

Fairfax Collegiate Math 3-4
Kodu Programming 3-4
Construction Engineering 3-4
Strategic Reading 5-6
EV3 Robotics Engineering 5-6
Prototyping and 3D Printing 5-6
Intro to Geometry 7-9
EV3 Robotic Vehicles 7-9
Biomedical Engineering 7-9

Afternoon

Writing Fundamentals 3-4
Intro to Robotics 3-4
Space Exploration 3-4
Fairfax Collegiate Math 5-6
GameMaker Studio 5-6
Civil Engineering 5-6
Dystopian Futures 7-9
Loudoun AOS Prep 7-9
Inventing and 3D Printing 7-9

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44675 Cape Ct.

Ashburn - West
St. Theresa Catholic School
21370 St. Theresa Ln.

Chantilly
St. Timothy Catholic School
13809 Poplar Tree Rd.

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

Fairfax
Gesher Jewish Day School
4800 Mattie Moore Ct.

Falls Church
St. Katherine Greek Orthodox Church
3149 Glen Carlyn Rd.

Herndon
St. Joseph Parish Hall
750 Peachtree St.

Leesburg
Loudoun Country Day School
20600 Red Cedar Dr.

McLean
Lutheran Church of the Redeemer
1545 Chain Bridge Rd.

Oakton
Pinnacle Academy
2854 Hunter Mill Rd.

Reston
Northern Virginia Hebrew Congregation
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Vienna
Green Hedges School
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