Curie-osity Hour

Have you ever thought of playing the banana bongos? All Academy students will participate in this makerspace course that ties together Science, Technology, Engineering, Arts, and Math (STEAM). Students will apply the engineering design process to Ask, Imagine, Plan, Create, and Improve by collaborating to brainstorm, model, build, test, and modify their solution. Topics will include Entomology and Robotics via fun hands on projects, such as replicating a firefly’s (Lampyridae) beautiful light show with LEDs and copper wire. Students will also calculate vast distances and trajectories to travel through space and hit a bull’s eye with Stomp Rockets. Student’s “Curie-osity” will be challenged and expanded by reinforcing concepts learned in other Summer Academy classes.

Mind Benders

Are you ready to be challenged? You will use your deductive and analogical reasoning to create your own logic puzzles like Einstein’s iconic fish riddle and perhaps a strategy game like Dungeons and Dragons. We will also learn about cryptography to develop secret messages then use the messages to create an insanely difficult escape room! Do you think you have what it take to save the world from a Zombiepocalypse? *Note: All extended-day students will participate in this class. Activities vary based on different age groups.

Gr. 1-2

(Please note that you will choose a community, e.g., Jr. Scientists, and take all the courses contained in the community. Half-day students will be assigned with the two courses that are running in the morning within the community chosen.)

Jr. Scientists

The Jr. Scientists community focuses on science courses including chemistry, entomology, and aviation science.

Crazy Concoctions

Are you fascinated by how coke and Mentos can create eruption? This chemical engineering classes introduce you to fundamental concepts of solids, liquids, and gases. You will investigate the properties of several crazy concoctions and make your own samples of bubbles, play dough, flub, and more!
Creepy Crawlers

Creepy CRAWLIES! Yikes! Cool! Gross! Let’s work together and discover how cool insects really are! Can you imagine walking around with eight legs? Would you be faster and more powerful? We will work as scientists, researchers and investigators to gain a greater understanding of the tiny creatures we see every day. Come and discover why bees dance, observe the growth of silkworms and/or beetles, and explore the lifecycle of the butterfly!

Taking to the Skies

Calling all pilots! You will explore the science and engineering principles that allow humans to fly. Enjoy a fun and challenging introduction to aviation, including airplane parts, control surfaces, angles, weight and balance, the metric system, careers, and the history of flight. You will use your design and engineering skills to build things that really fly!

Jr. Tech Trailblazers

The Jr. Tech Trailblazers community focuses on engineering and technology courses including programming, electronics, and mechanical engineering.

Scratch Jr.

Calling all digital storytellers! This introductory programming and creative writing course is designed to challenge students to create stories using the Scratch Jr app. Students will explore the elements of storymaking while also learning programming logic.

Rainbow Electronics

Do you love taking things apart and putting them back together? Explore the basic principles of electronics using resources such as Snap Circuits. You will work in groups and individually on challenging electronics activities that promote problem solving, collaboration, communication, and the engineering design process. Electronic inventions developed in class may include a vehicle and a throwing arm.

Gadgets and Gizmos

This junior Mechanical Engineering classes introduce our youngest engineers to fundamental concepts of energy, materials, and movement. Through open and focused exploration, students explore and construct their own roller coasters, catapults, cars, and more.

Jr. Rising Star

The Jr. Rising Star community offers students a mixture of science, art, and writing courses.

Artist's Canvas

Are you a Van Gogh or a Picasso? Whatever your style, find your inner artist through this extension of Painting Techniques by exploring the history of art through the evolution. Guidance will be provided by an experienced artist. You will complete painted works modeled after the style(s) of your choice.
Write, Create, Act

Be prepared to bring your pens, creative minds, your acting skills, and a needle and some thread! Choose a story, rewrite it. Choose a character, design a unique costume. Choose a spotlight, act out your revised story. Take this course if you want to use your imagination, creativity, and "acting chops"!

Crazy Concoctions

Are you fascinated by how coke and Mentos can create eruption? This chemical engineering classes introduce you to fundamental concepts of solids, liquids, and gases. You will investigate the properties of several crazy concoctions and make your own samples of bubbles, play dough, flub, and more!

Jr. Explorers

The Jr. Explorers community allows students to explore engineering, arts, and science.

Gadgets and Gizmos

This junior Mechanical Engineering classes introduce our youngest engineers to fundamental concepts of energy, materials, and movement. Through open and focused exploration, students explore and construct their own roller coasters, catapults, cars, and more.

Clay Apprentices

Put on your smocks and roll up your sleeves! You will be sculpting with clay and learning about clay art in other cultures. Your masterpieces may include pottery, figurines, and other items of your choice. You will have a chance to have your clay model 3D printed!

Creepy Crawlers

Creepy CRAWLIES! Yikes! Cool! Gross! Let’s work together and discover how cool insects really are! Can you imagine walking around with eight legs? Would you be faster and more powerful? We will work as scientists, researchers and investigators to gain a greater understanding of the tiny creatures we see every day. Come and discover why bees dance, observe the growth of silkworms and/or beetles, and explore the lifecycle of the butterfly!

Arts and Recreational Courses:

Poise and Public Speaking

Everyone has the potential to speak effectively, evolve their own personal style, and develop poise and confidence when communicating with an audience. In American schools, in-class presentations are becoming increasingly central to academic success. This class provides fun and easy exercises to help you discover your “power voice” within and how the correct use of that voice can help make you an effective speaker in front of an audience.

Watercolor Works
In this course, we will explore painting with watercolor. You'll practice basic wet and dry techniques, washes, and blends. Composition and 2D design of the visual arts are fused with the inspiration of the natural world, including plant and animal life, which help you get a closer look at a smaller world that you may otherwise walk right by! Come ready to roll up your sleeves and put on your smocks!

**Soccer**

GOAL! Soccer is a staple in many countries around the world, testing players on their coordination, speed, strategy, and team play. The excitement and preparation for the World Cup alone puts people all over the world abuzz. We will be outside to practice techniques and strategies, skills and drills, and learn the rules of the game. This sport helps players increase coordination, agility, and endurance. *Note: this course focus on recreational soccer, not professional soccer.*

**Disc Olympics**

Prepare for the ultimate showdown of disc sports! You will design and play some of the many games that involve discs: disc golf challenges, ultimate Frisbee, and other challenging games. During Disc Olympics, you will learn proper techniques for throwing, catching, and aiming discs. At the end of the three weeks we will have a day of challenges, tricks, and the ultimate Disc Olympics showdown!

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**Gr. 3-4**

(Please note that you will choose a community, e.g., Scientists, and take all the courses contained in the community. Half-day students will be assigned with the two courses that are running in the morning within the community chosen.)

**Scientists**

The Scientists community focuses on science courses including architecture and engineering, entomology, and aviation science.

**Hard Hats Construction**

Ever wonder why skyscrapers can be so tall or why bridges can handle the weight of so many cars? Let's explore together! Through hands-on activities, you will experiment with and illustrate shapes, forms, and forces used in building the world around us. Be prepared to bring your own ideas as we lay the foundation for our budding architects, engineers, and scientists!

**Superhero Insects**

How do insects perform heroic feats of strength? What tricks or traits could we borrow from insects to become superhuman? You will explore the world of insects and their anatomy to investigate how they do super things everyday.

**Up up and away**
During this Aerospace Engineering class, you will design, create, test and refine a variety of flying machines. You will build a shock absorbing system designed to protect two marshmallow astronauts in a lunar vehicle, as well as creating your own air-powered rockets. Also, assemble a hot air balloon model that actually takes flight!

**Tech Trailblazers**

The Tech Trailblazers community focuses on engineering and technology courses including programming, ocean engineering, and computer skills.

**Animation with Scratch**

Coding has quickly become the newest language for future professionals. Scratch is a programming language designed to help children learn to program. You will individually to create interactive stories, animations, games, and/or music - all while learning the fundamentals of computer programming.

**Designing Submersibles**

To study the ocean, scientists use submersibles—small, remote-controlled underwater vessels. This course introduces you to the field of oceanography. You will learn about sounding poles and sonar as you map a section of the ocean floor. In collaboration with your classmates, you will apply your knowledge of density, floating, and sinking to design your own submersible.

**Character Development through Office Suites**

Whether you’re completely new to Office Suites (Microsoft or Google) or are just looking to build your skills for the future, you’re in the right spot! This course offers a mix of text, video, interactives, and challenges to practice while creating your own fantasy character. You can learn the basics and more about document editors, spreadsheets, slide presentations and page publishers. You’ll also learn tips, tricks, shortcuts, and more to better use these programs in your school and extracurricular life. Let’s get started!

**Rising Stars**

The Rising Stars community offers a mixture of history, art design, and business courses.

**Knights, Dragons, and Castles**

From the high sea adventures of the Vikings to the mythical Round Table of King Arthur, the Dark Ages and Middle Ages provide us with the most interesting and fascinating people, places, legends, and events in history. In this course you will design castles to protect your kingdom, devise strategies to defeat dragons, and learn what medieval people ate, wore, and believed. Incredible stories of mystery, intrigue, and adventure will come to life.

**Graphic Design**

Have you ever stopped and looked at a billboard? Who designed it? Why did they use those colors, or that type of font? Graphic designers have to convey a message for targeted audiences
for specific companies or products. Come learn about how to create your own logo, and transform pictures with just a few clicks.

**Young Entrepreneurs**

Become the next entrepreneur! The course is designed to expose the interested student to many functions of modern business using analytical and problem-solving skills. Topics such as business environment, management, marketing, accounting, and data processing are discussed in an introductory manner. If you're thinking about starting your own business in the future, this is the right course for you! You will learn everything from how to develop proven marketing techniques to traditional and nontraditional financing options.

**Explorers**

The Explorers community allows students to explore engineering, arts, and entomology courses.

**Designing Submersibles**

To study the ocean, scientists use submersibles—small, remote-controlled underwater vessels. This course introduces you to the field of oceanography. You will learn about sounding poles and sonar as you map a section of the ocean floor. In collaboration with your classmates, you will apply your knowledge of density, floating, and sinking to design your own submersible.

**Clay Masters**

We will be working with clay! Create sculptures, pottery, jewelry, and learn about how different cultures use clay. We will be working on coiling to create vessels, creating pinch pots, and ultimately creating small sculptures. This class will be using self-hardening clay to create masterpieces. We will 3D print your models at the end of the class!

**Superhero Insects**

How do insects perform heroic feats of strength? What tricks or traits could we borrow from insects to become superhuman? You will explore the world of insects and their anatomy to investigate how they do super things everyday.

**Arts and Recreational Courses:**

**Digital Photography**

“Smile!” This course will explore the techniques necessary to successfully take professional-quality photographs. Students will work collaboratively and individually to design, shoot, modify, and critique photographs of a variety of subjects in different settings. Digital cameras will be provided, however students are encouraged to bring their own digital cameras and accessories.

**Strategy Game Design**
Design your own strategy game while investigating the structure of existing games from Chess to Othello to Risk. Students will be challenged to design, build, develop and present a marketing strategy for a new game. Students will play and review each other’s games.

**Mindfulness**

Did you know the way you stand says a lot about you? Are you curious to know why people react a certain way? This fun interactive course is designed to develop an understanding of the power of your brain and its connection to the human body. This course will teach students how their emotions are encased with their body movements. With a stronger understanding of their emotions and body language it will create a stronger self connection that will embolden their future journey.

**Disc Olympics**

Prepare for the ultimate showdown of disc sports! You will design and play some of the many games that involve discs: disc golf challenges, ultimate Frisbee, and other challenging games. During Disc Olympics, you will learn proper techniques for throwing, catching, and aiming discs. At the end of the three weeks we will have a day of challenges, tricks, and the ultimate Disc Olympics showdown!

**Soccer**

GOAL! Soccer is a staple in many countries around the world, testing players on their coordination, speed, strategy, and team play. The excitement and preparation for the World Cup alone puts people all over the world abuzz. We will be outside to practice techniques and strategies, skills and drills, and learn the rules of the game. This sport helps players increase coordination, agility, and endurance. *Note: this course focus on recreational soccer, not professional soccer.

Gr. 5-6

**Da Vinci's Designs**

Over 500 years ago, Leonardo da Vinci conceived possibilities far beyond the understanding of others. His ideas about anatomy, mechanics and flight reveal a model scientist’s extraordinary vision. This class will bring the innovations of Leonardo da Vinci to life. You will replicate and test these amazing inventions, from flying machines and war weapons to diving gear and a self-propelled car. You will recreate Da Vinci’s iconic artwork and reflect on the work of a true visionary.

**Mysteries, Conspiracies, and Intrigues**

A course guaranteed to fascinate and challenge both history and mystery lovers alike. This will include the disappearance of Amelia Earhart, the explosion of the Hindenburg, the “death” of Beatles Paul McCartney, mysterious Stonehenge, the incredible conundrum of Princess Anastasia, the true meaning of the Wizard of Oz, the Bermuda Triangle, the presidential
assassinations and so much more. In short, we will investigate the most fascinating and thought-provoking events of all time. Armed with film, historical artifacts, and a dash of speculation, this course promises to be an entertaining and unique opportunity to study, learn, and enjoy the pursuit of historical truth.

**Professional Graphic Design**

Have you ever been fascinated by any print media ad? Why is the ad so attractive? Explore how professionals create graphics for digital media using the design process. Work collaboratively and individually to create vector- and raster-based graphics using Adobe Creative Cloud (Photoshop, Illustrator, and/or InDesign).

**Marine Ecology**

Do you love the ocean? Do whales and sea worms fascinate you? Join us for an exploration of marine ecosystems around the world. You will work collaboratively and individually to investigate how marine ecosystems function with a focus on each ecosystem's food web. Learn why coral reefs are called "underwater rainforests" and share in the excitement of creatures who glow in the dark!

**Neuroscience**

In this class we will explore the mysterious world of Neuroscience. Discover the complex world of the brain, spinal cord, senses, and neurons. Neuroscience labs can be noisy! Crackling occurs from amplified responses of neurons, machines pump, and needles slide across paper recording responses. Be prepared to go in-depth learning about what different sections of the brain are responsible for.

**Einstein's Astrophysics**

When you look up at the night sky, do you wish that you had an ultimate telescope that could visualize different types of particles? Embark on a deep dive worthy of Einstein and Hawking, an intergalactic exploration from how stars and galaxies function to the theory of relativity. Discover how we have developed ways to observe the universe from telescopes to the Large Hadron Collider. Work collaboratively and individually to explore strange objects and analyze different types of processes. This course will encompass many advanced topics but will focus on particle physics and quantum mechanics.

**From Tsunamis to Supervolcanoes**

Explore the violent beauty of the Earth by investigating the occurrence and human impact of natural disasters. Are there any active supervolcanoes? Why should we be concerned about the Canary Islands if we live along the East Coast? What is the difference between East Coast and West Coast earthquakes and why does it matter? Develop an understanding to nature’s most destructive events and discover what we need to know to survive the deadliest natural events on our home planet.

**Chemistry of Food**
Why do onions make you cry? Do you see your kitchen as your lab? Work collaboratively and individually to explore the chemical reactions necessary for us to enjoy our food. Discover at the molecular level what occurs when dough expands or a sauce thickens.

**Digital Game Design**

Ready, set, code! Are you ready to crack your knuckles and buckle down to make the next best game? In this course you will learn the fundamentals to coding in Javascript using code.org. You will be recreating games like Tetris and creating new fun video games like a flying pig collecting rings. Using your new coding skills, your imaginations are your only limit!

**Going Viral: Epidemiology**

How have we, as a species, managed to endure and conquer disease over time? What worked, what didn't, and how has that affected our history? Work collaboratively and individually to determine the causes of an outbreak. You will explore the responses to the spread of disease from ancient plagues to the ongoing HIV pandemic.

**Building Disney**

Join us on our expedition to the Magical World of Disney. From humble origins he and his descendants created one of the largest corporations in the world, invented feature-length animated films, won more Oscars than any other individual and created an amusement park aptly labeled “The Happiest Place on Earth.” In this course we will trace the rise of this entertainment genius and the incredible success of the Disney brand. From Steamboat Willie to Frozen and beyond, to Disney World’s ever-changing landscape and intriguing food menus, to the fascinating plans for future Disney adventures, we will cover it all.

**Aviation Science**

Let’s learn about flight! Learn about aviation history and the physics that makes modern flight possible. You will investigate aviation concepts, Bernoulli’s Principle, and Newton’s Laws, and key historic individuals. You will also explore a variety of aircraft designs, including kites, hot air balloons, dirigibles, gliders, helicopters, planes, and rockets. This course is perfect for students new to aviation or those looking to build on their knowledge.

**CSI: Examining the Evidence**

We are crime scene investigators, please don't touch anything! How do you scientifically determine who has committed a crime? Let’s try to examine the evidence. You will work collaboratively and individually to understand and apply methods of forensic science such as fingerprint and blood spatter analysis and making your own crime scene!

**Found Art**

Can a bicycle wheel placed on top of a kitchen stool or an artist’s bed -- complete with crumpled sheets, dirty tissues, and other objects be considered art? What masterpiece will you create (and what will the critics’ say)? We will take other people’s garbage and turn it into something fine and refined.
Robots Olympics

Save the world with robots! This course is designed to challenge students to choose a real-world problem to solve and use robots as the focus of the solution. Investigate the problems, then design, model, and build the solution using computer design software and available parts. Students will present their solutions, critique each other’s projects, and use the feedback to improve their solutions. Students will be encouraged to create solutions that also accomplish goals in other courses.

Arts and Recreational Courses:

Effective Public Speaking

Did you know if you read a sentence in three different ways, you are able to project three completely different meanings? In this course you will be challenged to create an original argument where you not only learn how to read in a persuasive manner, but also how to handle curveballs that may arise. You will work on understanding powerful body language, how to motivate through tonality, and begin to learn how to connect with an audience on a personal level. The course will utilize techniques in acting such as improvisation and relaxation. Please note: This course is not a debate course; rather it will focus on presentation, rhetoric, and writing.

Gee Gee Origami

Discover the ancient art of paper folding. Depending upon how you learn, math classes can cause panic and intense sweating (not so good for the student sitting next to you)! From basic to complex, you will learn paper folding techniques that demonstrate geometrical concepts. You and your classmates will construct a variety of origami models including geodesic domes. Learn to solve linear equations represented in origami. Learn the math and science concepts in paper folding! Be prepared to succeed and achieve moving from novice to practitioner to expert levels of skill and knowledge.

App Development

Develop your own app! Students will explore how to develop an HTML5 app using MIT App Inventor. Investigate the logic and functions necessary to design and build your app. Students will be encouraged to create apps that either accomplish goals in other courses, i.e. Social Justice Statistics, or help to either educate the user about or directly solve a real-world problem. Students and their parents are responsible for posting the app for review and public release if they choose to do so.

Science of Pilates

This course will focus on empowering students to discover and utilize the mind-body connection via proper practice of Pilates. This will help student be more relaxed, flexible, happy and productive, improve their body image and productive including improving self-esteem. Students will learn about origins of Pilates, main principles of proper practice, and their application to various poses. They will study anatomy and kinesiology of Pilates movements and application of basic physics to the Pilates.
Soccer

GOAL! Soccer is a staple in many countries around the world, testing players on their coordination, speed, strategy, and team play. The excitement and preparation for the World Cup alone puts people all over the world abuzz. We will be outside to practice techniques and strategies, skills and drills, and learn the rules of the game. This sport helps players increase coordination, agility, and endurance. *Note: this course focus on recreational soccer, not professional soccer.

Gr. 7-12

Mysteries, Conspiracies, and Intrigues

A course guaranteed to fascinate and challenge both history and mystery lovers alike. Subjects covered include the disappearance of Amelia Earhart, the explosion of the Hindenburg, the “death” of the Beatles’ Paul McCartney, mysterious Stonehenge, the incredible conundrum of Princess Anastasia, the true meaning of the Wizard of Oz, the Bermuda Triangle, presidential assassinations and so much more. In short, we will investigate the most fascinating and thought-provoking events of all time. Armed with film, speculation and actual historical artifacts, this course promises to be an entertaining and unique opportunity to study, learn, and enjoy the pursuit of historical truth.

Fundamentals of Aerodynamics

How do airplanes work? Why does a wing change shape on takeoff and landing? Aerodynamics is the study of forces and the resulting motion of objects through the air. Through simulation software, you will learn Newton's basic equations of motion, the motion and terminal velocity of a free falling object, and the forces that act on a glider and a powered airplane.

Food Microbiology

Let’s explore the food microorganisms that make our cheese, yogurts, and bread. From pathogenic organisms to the processes that beneficial contribution to all fermented and spoiled foods. Students will learn how to detect and quantify microorganisms present in food, how they survive in such environments and how to characterize the new emerging organisms. You will also discover the microbiology of health and wellness food, learn about quality control issues, and much more.

Foundations of Artificial Intelligence

Will you be the creator of the robot race? In this course you will learn how to program agents that simulate general intelligence with Java and Dialogflow. You will create your own chatbot and test its ability to pass the Turing Test. There will also be an introduction to topics such as natural-language processing, machine learning, and much more.

Wow! Scientific Writing
Love science but want to communicate it more effectively? Science writing explores and explains how our world works. It offers students an opportunity to refine their skills in presenting clear and understandable prose about technical and scientific issues to various audiences. In this class you learn to write a college-level academic paper and learn topics including ethical issues in scientific publication, writing for general and field-oriented audiences, and the scientific manuscript. You will select a topic from a STEM course you took in the summer and write a comprehensive report or essay. Class work provides students with diverse opportunities to study, share ideas, research, and draft their papers.

**Non-Newtonian Fluids**

Ever get frustrated trying to get ketchup out of the ketchup bottle? Ketchup is actually one of the many imposter liquids, just like sand, snow, honey, and silly putty! You will be exploring the characteristics of such liquids that act like solids and their importance. In this course you will use these behaviors to recreate body armor, earthquake proof homes, better bottles, and more! So put on some gloves and get ready to make a mess and innovate!

**Advanced Business Strategies**

Make strategic analysis skills your business! In this course, you'll learn the statistical analysis tools to analyze operational business strategies across time (competitive dynamics), industries (corporate strategy), geographies (international strategy), and institutions (non-market strategy). Students will analyze the success and failure of large companies by exploring how advanced economic ideas were applied to inform critical decisions. Groups and individuals will be challenged to design or improve their own business including the presentation and peer critique of their strategic management and marketing plans.

**Biotechnologies**

Biotechnology is an amalgam of various technologies associated with biology and chemistry. It has been an immense help for improving human health as well as the environment leveraging genetic information to develop remedies. This course will provide an overview of the technologies biologists use to understand human body and environment at a molecular level, including genomic sequencing techniques, protein sequencing, recombinant DNA technology, and gene cloning. This course will also provides experience in selected laboratory procedures including making media, culturing bacteria, and perform DNA manipulation.

**3D Visualization with Sketchup**

Let’s design new 3D buildings, car or anything your imagination can muster. This course is designed to introduce students to ideas, principles, and methods of designing 3D spaces and objects via Sketchup. You will explore the concepts of space, form, function, and technology through exercises in the visualization and drafting of architectural objects, vehicles, and other objects. Leave the class with a project design of your own!

**WoW! Your Own Personal Statement**
Your personal statement is your opportunity to sell yourself in the college application process. Come to this class and learn about what questions to ask yourself before you write. Learn about how to answer the questions that are asked, how to tell a story, how to be specific, how to find an angle, and how to write well and correctly. Our experts will guide you through the writing process. By the end of the class, you will have an AWESOME personal statement that will help you shine in the application process!

**Current Controversies**

Yesterday is history. Events we are reading or hearing about right now is also history. Have you ever heard a news story on the radio or read a news piece online and wondered why it was important? We will be discussing current events including the electoral college, gay rights, and many more controversial topics. In combination we will research to see if these events are tied to previous events in history. We will be writing, researching, and discussing current news topics in this class. Topics will focus on current events in science, the arts, and global affairs.

**Virtual Reality Design**

This course is an introduction to virtual reality, emphasizing basic applications in education and other fields. The course will teach you everything from the basics of VR— the hardware and the history of VR— to different applications of VR, the psychology of Virtual Reality, and the challenges of the medium. You will explore Mobile VR as well as devices such as the Google Cardboard. By the end of this course, you will create and deploy a VR application using Unity. This course is for anyone with no or little previous experience in Virtual Reality but interested in how to bring their ideas onto this new platform. *Note: This course requires you to bring in your own smartphone.

**Genetics**

DNA is the blueprint for life—and every living organism can read the genetic code. Do you know the genetic code... after this course you will! In this course students will engage in problem-based learning to explore the building blocks of DNA, how genes provide the instructions for our traits, and how to construct and analyze genetic family trees. Students will become geneticists to make predictions about what errors can occur in DNA, how mistakes happen, and what impact that could have on an organism.

**Data Science for All**

This course provides an introduction to data science. With collected data from internet denizens, survey respondents, or wireless sensors, how can one understand the phenomenon of generating the data, making predictions, and improving decisions? Students will learn to extrapolate and interpolate data in conjunction with hands-on analysis of real-world datasets including economic data, document collections, geographical data, and social networks. You will also work on social issues in data analysis such as privacy and design.

**SAT Prep (Math)**
Daunted by the SAT? Determined to ace the test? Discover more than 25 test taking strategies as well as exercises to strengthen your pre-algebra, elementary arithmetic, algebra and geometry skills. Let us provide you with all the tools you need to foster success.

**Arts and Recreational Courses:**

**G&T Debate**

Prove you have what it takes to craft and deliver polished responses as part of the Gifted & Talented Debate Team! Verbal communication mastery is a highly valued skill. Work collaboratively and individually to practice your written and verbal communication skills. From doctors and lawyers to parents and politicians, your debating skills will serve you well.

**Coding Game**

Have you ever wanted to learn how to program your own game? This course will do just that, through creating games similar to Crossy Road or Frogger and playing games on Codingame.org! You will learn the core concepts required to build games in any language. By the end of this course, you’ll be familiar with concepts such as variables, functions, conditional statements, and loops. Advanced students will use the Pygame library and Python to create portfolio worthy games!

**Treehouse Architecture**

Have you ever dreamed of living in a treehouse - or even designing one of your own? During this course you will explore many amazing treehouses around the world. Learn the basics of architectural design, then work in the natural environment to engage in the design of your own private "retreat" in the trees.

**Manga: The Graphic Novel**

Who is the main character of your next graphic novel? This class will focus on two main areas, character creation through pen and ink drawings and storyline development. Students will begin to break down the art of panel writing for the graphic novel. The final project for students will be a short story with their own unique characters. Is your main character going to be the villain or the hero?

**Let's Dance**

Have you ever wanted to take a Salsa dance class? Get a cardio workout while dancing the Brazilian Samba? Or get your blood flowing listening to popular hip hop or pop songs? In this class you’ll have a great time learning foreign dances and the cultures where they originate. The diversity in choreography will cover dances and popular songs from several different countries. Students will learn and internalize multiple learning perspectives, multiple cultural practices, values, and traditions. In doing so, students will be able to articulate a synthesized understanding of trends, structures, and components that are common to all.
Online Courses (gr. 4-8 only)

The Architectural Experience

This conceptual architecture course is designed to enrich and extend the focus on introducing students to architectural patterns and techniques through activities, photos, and videos. Students may need to use common household items such as rulers, straws, and cardboard to complete their own architectural models. This course will address CCSS Math 5.MD.C.3 through C.5, 5.G.B.3, 5.G.B.4, and 6.G.A.4, and NAEA Visual Arts Standards VA:Cn11.1.4a through 1.7a, VA:Re9.1.4a, VA:Re7.2.5a, VA:Re7.1.6a through 1.8a. Successful students are those who enjoy finding patterns in data, who are observant and inquisitive, who are not afraid to actively contribute to scholarly discussions among peers, who have a strong command of written and verbal English, and who possess a sustained motivation to complete tasks on time. This course includes one hour of online discussion over eight nights, so students will need Internet access to communicate via the Canvas learning management system.

Biodiversity

This conceptual life science course is designed to enrich and extend the NGSS life science standards by exploring biomes through the lens of ecosystem operation. Specific species such as the whale shark will be introduced each week to highlight the importance of biodiversity to support the local ecosystem. Students will be challenged to consider how energy flows through an ecosystem’s food web and discuss environmental factors that could affect ecosystem operation. This course will address NGSS Life Science Standards 3-LS4-2 through 4-4, 5-LS2-1, MS-LS1-4 and 1-5, MS-LS2-1 through 2-5. Successful students are those who enjoy finding patterns in data, who are observant and inquisitive, who are not afraid to actively contribute to scholarly discussions among peers, who have a strong command of written and verbal English, and who possess a sustained motivation to complete tasks on time. This course includes one hour of online discussion over eight nights, so students will need Internet access to communicate via the Canvas learning management system.

Python Programming

No, this course has nothing to do with snakes! Python is an advanced, multi-paradigm programming language that tends to be more versatile than C++ or Java. Students will work collaboratively and individually to create their own animations, games, tools, or anything else they can think of in a fun and interactive environment. Students will gain insight into the mind of a computer programmer as well as a basis for further education in software development. This course includes one hour of online discussion over eight nights, so students will need Internet access to communicate via the Canvas learning management system.