

SUMMER GIFTED AT DOMINICAN



**course descriptions
2017**

WEEK 1: JUNE 19-23

Fun with Fibonacci!

Did you know that the beautiful Fibonacci sequence, which was discovered by an Italian mathematician nicknamed Fibonacci, was best known in a famous math problem about multiplying bunny rabbits in the early 1200s? Discover the complex beauty behind the simplified answer, and realize just how much this beautifully intriguing sequence can be found throughout nature and everywhere around us! Students will become familiar with Fibonacci numbers and explore the many ways in which these numbers are expressed in our everyday world. Participating in a series of daily math-based games, cooperative and independent math activities, as well as math related stories, students will gain an understanding of the Fibonacci sequence of numbers. Students in this class will discover the fun in recognizing how Fibonacci numbers relate to our everyday world and the relevance of mathematical operations to these specific numbers.

This course includes an additional \$15 supply fee.

Grades 2/3, Week 1

Bug Life

Did you know that an ant can carry fifty times its own weight? And there are more types of beetles on Earth than there are plants! Students will become insect experts as they study various types of bugs, and discover how important they are to our planet. In this hands-on class, students will examine insect anatomy, go on outdoor bug hunts, research insect facts, role-play insect societies, and discuss issues such as how non-native insects can become invasive pests.

This course includes an additional \$15 supply fee.

Grades 2/3, Week 1

Artful Wonders

This course is designed for students who want to learn more about the art Wonders of our world. Students in this class will learn about different people around the world with a focus on the art of each particular culture. Many cultures around the world create masks for ceremonies, for theater, for puppet shows or to connect with their ancestors. Students will learn about the gold masks of the ancient Incas, they will

walk the jungles of the Mayan rainforest where buried jade masks have been found. Students will learn about the art and cultures of West Africa and the masks they make. We will also learn how the Indonesians used masks to connect with their ancestors and how their designs reflect their beliefs. Based on each culture we explore, students will create works of art in a hands-on studio style environment.

This course includes an additional \$15 supply fee.

Grades 2/3, Week 1

Sudoku and Such

Keep your mind sharp and develop your brain power with the benefits of Sudoku and such! Number games, math riddles, and puzzles throughout the week assist math-minded students in improving memory, developing mental math skills and speed, and increasing levels of concentration. Students also have the opportunity to create their own Sudoku puzzles and number games to challenge their friends and family, and nourish their creative sides.

Grades 3/4, Week 1

Aerodynamics: How Airplanes Fly

Have you ever wondered how airplanes fly? This class will explore the science of flight as we investigate the parts, development, and uses of the modern day airplane. We will examine the principles of aerodynamics that make flight possible, including air pressure, force, and energy through hands-on learning activities. We will apply these concepts, along with the contributions of such pioneers as Galileo, Newton, and Bernoulli to create our own model airplanes and gliders!

This class includes an additional \$15 supply fee.

Grades 3/4, Week 1

Fairytale Trials: Legal Eagles

Did you know that the Grimm Brothers were actually lawyers? Participants will explore the judicial process via the medium of the fairy tale. In addition to learning trial procedures, students will learn skillful mediation techniques as they explore both the prosecution and the defense roles using collaboration and improvisation. Did the wolf intend to murder the pigs, or was he a victim of pigrimication? Is Jack a victim, or

guilty of stealing the golden hen? Was the Pied Piper the victim of a broken contract, or was he the perpetrator of a mass kidnapping? Students take on the roles of plaintiffs, defendants, lawyers and judges to determine the case of these fairy tale trials!

Grades 3/4, Week 1

Math Games, Puzzles & Problems

Joshua weighs half as much as Michael, and Charlie weighs three times as much as Joshua. Their combined weight is 240 pounds. How much does each boy weigh? Students in this playful math course exercise their brains as they develop their logical reasoning skills, gain mastery of key math concepts, and apply their knowledge to increasingly advanced challenges in the form of various math puzzles, riddles and logic problems, academic board games and more!

This class includes an additional \$15 supply fee.

Grades 4/5, Week 1

Jr. Naturalists

Join this course to become a real naturalist! Participation in this course means exploring the natural components of your community that interest you the most, while observing the natural world and building your knowledge about it. Daily bird watches, hunting for tracks, and local plant and animal identification are just part of this course. Students will gain knowledge, about the environment while learning about animals, habitats, ecosystems, and niches. They will explore interdependence, changes and adaptations, biodiversity and wildlife resources, human impact, and responsible actions and service. Enjoy the observation of nature and become a citizen scientist, as well as a steward to the nature closest to you!

This course includes an additional \$15 lab fee.

Grades 4/5, Week 1

Stick to the Script: Introduction to Screenwriting

In this exploratory and writing intensive course, students will be introduced to the wonderful art of screenwriting. Students will transform an original story idea from pitch to story to treatment, and finally to screenplay or script. As budding

screenwriters, students in this class will develop their traditional notebook stories into structural detailed works suitable for a film-short. They will learn screenwriter's language such as plot, scene development, dialogue, conflict and conflict resolution, the three-act film, and character development. The stages of screenwriting will come to fruition as students gain an understanding of what makes a story better and how it all begins with a basic screenwriting format.

Grades 4-6, Week 1

Chess Masters

"No one ever won a game by resigning." - Savielly Tartakower, Chess Grandmaster

Chess is more than just a game in this fast paced class! It's an art, a science, a sport, and ultimately, it's an exercise of endless possibilities for the inquisitive mind. Students in this class will learn important terms, principles and strategies as they further explore patterns, logical reasoning, strategic planning, and how to develop one's pieces. As they engage in friendly competitions and mock tournaments, future chess masters in this class will gain an appreciation for their mathematical understanding of the board squares, the strategic importance of the board, and much, much more!

This class includes an additional \$15 supply fee.

Grades 5-8, Week 1

Scream Machine: The Need for Speed

Roller Coasters are an exhilarating ride for people of all ages. Thrill-seekers will get their adrenaline pumping through hands-on, engineering activities to learn the physics behind a roller coaster. Using algebraic skills, students will calculate speed, as well as learn about kinetic and potential energy at work to give riders that rush! Students will examine roller coasters through simulations, ultimately building their own coaster that any of their friends would travel for miles to enjoy.

This class includes an additional \$15 supply fee.

Grades 5-7, Week 1

The Best of Roald Dahl: Novel, Poetry, Short Story, and Memoir

British author Roald Dahl was a wordsmith, social critic, and above all, master of

humorous poetry and prose. Hailed by critics for “an ingenious imagination,” he is perhaps best known to young readers for his wonderfully satirical children’s novels, *Charlie and the Chocolate Factory*, and *Matilda*. Dahl also wrote delightfully wicked short stories, hilarious poetic takes on classic fairy tales, and a fascinating memoir of his childhood full of remarkable tales, “some funny, some painful, some unpleasant...and all true.” In this literary intensive course, students will further their appreciation of Dahl by reading, writing, acting, and otherwise responding creatively to a range of Dahl’s work, using him as inspiration for art, poetry, and more!

This course includes an additional \$15 supply fee.

Grades 5/6, Week 1

Pi and the Great Pyramid

In this course, students will dive into the mysteries of the Great Pyramid of Egypt found in the Ancient city of Giza. This amazing building was the tallest for thousands of years and is a testament to humanity in many respects other than just its sheer size. Hidden within the various dimensions of the Pyramid are two of the most famous mathematical constants, Pi and Phi. Students will discover how these two natural ratios are embedded in the construction of the Great Pyramid, as well as many ideas as to why they manifest themselves. We will go back in history to learn about the Rhind and Moscow Papyri by solving some of the very same problems the Ancient Egyptians solved thousands of years ago. With an understanding of Egyptian History, the ratios of Pi and Phi, as well as learning the skills of 2D and 3D geometric Constructions, each student will come up with their own conclusions as to how and why the Pyramids were built.

This course includes an additional \$15 supply fee.

Grades 6-8, Week 1

Physics & Engineering: Space Academy

Do you stand in awe of the stars at night, imagining what wonders could be out there so distant in the cosmos? The universe is a very big place, but is it infinite? What strange and amazing things can be found in our solar system, in our galaxy, and beyond? What would it take to visit these places, and are there things worth visiting "in our own backyard?"

Week 1: June 19-23

Week 2: June 26-30

Week 3: July 10-14

Week 4: July 17-21

Students will learn about how planets work, how to find them around other stars, and how we think they form. We will learn about the life cycle of stars and why the cycle happens this way, including favorites like black holes, nebulae and supernovae. Mathematics skills will not be necessary, but students seeking a challenge can be provided one! The physics equations governing the motions of planets, such as with velocity, acceleration, force, and universal gravitation will be offered.

This course includes an additional \$15 lab fee.

Grades 6-8, Week 1

Writer's Workshop: The Art of Storytelling

In this writing intensive workshop, students will learn the elements of story writing from creating characters, settings and plots to resolution of the story line. The young writers will engage in group story construction over the course of the week and will present their group's' stories during Open House on Friday. Additionally, writers will craft their own stories employing the concepts learned in the class. Whatever form these stories take is entirely up to the student, and can include their own take on graphic novels/comics style writing. Use of the imagination combined with setting up a solid story structure is the emphasis here, as is having fun and playing with the process!

Grades 6-8, Week 1

WEEK 2: JUNE 26-30

Number Pyramids and Puzzles

Increase your arithmetic knowledge and speed up your mental math skills in this thrilling journey of mathematics. In this fast-paced math class, students will practice mathematical operations and gain speed with automaticity of math facts and logical thinking. Students will participate in a variety of individual and group activities, learning games and problem-solving puzzles. Students will also practice skills related to inverse operations and number families.

This class includes an additional \$15 supply fee.

Grades 2/3, Week 2

Insect Investigators

Calling all budding entomologists and naturalists to uncover clues and gain information about insects and other arthropods. Did you know that some of these organisms are able to lift over 50 times their body weight? Others taste with their feet or have ears on their legs. Use the scientific method to explore and discover the characteristics of common and unusual arthropods. Students will build natural habitats and bring in samples to analyze and release. We will test different variables as we respectfully examine insects to discover their distinctive traits. You may not welcome insects and other arthropods into your home, but learn how life as we know it wouldn't exist without them!

This course includes an additional \$15 supply fee.

Grades 2/3, Week 2

How Art Thou?

This course is designed for students with strong artistic understanding, who would like to learn about how an artist's work changes throughout his/her life. Students in this class will see the work of artists such as Monet, Van Gogh, Miro, Durer and more. While learning about these artists, students will develop their proficiency in the use of painting, cray pas, printmaking and sculpture. They will take their work from their first ideas to final project as they explore the elements and principles paired with art history discussions surrounding the artists. Challenging and engaging material

centering on the work of these artists will be presented. Students will create works of art in a hands on studio style environment.

This course includes an additional \$15 supply fee.

Grades 2-4, Week 2

Monster Math

Friendly monsters will help students overcome math anxieties and develop mastery as they practice and prevail over addition, subtraction, multiplication, probability, and logic problems. Everyone will learn tricks to make mental math easier! In this interdisciplinary course, we will argue which monster is the scariest using various facts about size, strength, and speed of various monsters. Complex calculations will be made and cases will be presented.

Grades 3/4, Week 2

Introduction to Zoology: From Ape to Zebra

Do animals fascinate you? What zoo animals capture your attention and why? Students in this wild class go out on a limb to explore a branch of biology known as zoology. Investigating the important interrelationships in the animal kingdom, student zoologists will explore important concepts in animal structure and physiology, and also research a mammal, reptile, amphibian, fish, insect, mollusk, or worm that particularly fascinates them as a group or individual. Get ready to expand your knowledge about the biological world and identify, compare, and contrast the critical features used to classify all animals from Ape to Zebra!

Grades 3/4, Week 2

Word Power Challenge

Students in Word Power Challenge engage in friendly competition, build their vocabularies and spelling skills, and learn to play word games such as Scrabble, Boggle, Word Thief, Scattergories, Password, Blurt, Dictionary Dabble and more! Incorporating daily vocabulary words of the day, Greek and Latin roots, interactive class activities such as word games, explorations in neologism, and relevant film selections, students in this class will develop notable strength in word power as they finesse their way to the top and win their high-spirited competitions with endlessly

impressive words!

Grades 3-5, Week 2

Mathletes

For the math-minded mathlete, the summer is an important time to train the brain and keep it sharp during the “off-season.” Students in this interactive class engage in friendly quiz bowls, games, and competitions designed to challenge their math skills and ability to think quickly, correctly, and with confidence in their answers. This class is intended to foster interest in math, advance math competency, and encourage healthy sportsmanship, team support, and positive learning opportunities. The off-season schedule includes both individual and team events to benefit student learning holistically.

Grades 4/5, Week 2

Disaster Science

What causes a natural disaster and what can we do to save ourselves when an emergency strikes? How can human activity impact climate change, and how do we prepare for its disastrous results? Students will discover the secrets behind earthquakes, flooding, volcanic eruption, landslide, and hurricanes. Using problem solving skills and imaginative creativity, students will design innovative tools and techniques to utilize when faced with a natural disaster!

This course includes an additional \$15 supply fee.

Grades 4/5, Week 2

Advertising Agents

In this creative thinking and artistically driven course, students will learn the process of advertising through television commercials, magazine print ads, outdoor billboards, as well as the relevance behind product placement. Students will work collaboratively in advertising teams as they create a complete advertising campaign for an existing, discontinued, or mock product of their choice. Advertising teams will hold specific roles such as Creative Director, Art Director, Storyboard Artist, and Copywriter. Lastly, advertising teams will pitch their commercial campaigns and spotlight their work at Open House.

This course includes an additional \$15 supply fee.

Grades 4-6, Week 2

Scratch that Code!

Every student should have the opportunity to learn computer science! Coding has been called the “new literacy.” With Scratch, you can program your own interactive stories, games, and animations – and share your creations with others in the online community. Scratch that Code! will help students learn to think creatively, reason systematically, and work collaboratively – essential skills for life in the 21st century! This course includes an additional \$15 computer lab fee.

Grades 5/6, Week 2

Invention Convention: Rube Goldberg

Have you ever found a very complicated way to complete a very simple task? Rube Goldberg was a master at doing just that! Rube Goldberg is a famous cartoonist, sculptor and author. His hilarious inventions created elaborate ways to do simple things. In this class, students will become inventors, authors, and scientists examining the work of simple machines to create their own elaborate ways to complete simple tasks! Save up your trash and gather your old toys to get those creative juices flowing!

This course includes an additional \$15 supply fee.

Grades 5-7, Week 2

Introduction to Philosophy

This thought provoking course is central in asking "the big questions" and examining the beliefs we take for granted. What exactly is knowledge, and how do we know when we know something? Are you a free individual, or are you an automaton of physics whose mind is just along for the ride? What is the nature of good and evil? In this class, students will receive a primer on the history of western philosophy, guidelines on how to argue for and support their views with respect and clarity, and tackle a myriad of fascinating questions in the context of fun, out-of-this world thought experiments. What's happening in the mind of your zombie twin? An Introduction to Philosophy can help us find answers to these critical questions and

more!

Grades 6-8, Week 2

Physics & Engineering: Rocket Science

Now everyone can be a rocket scientist! Model rockets are a great way to get outdoors and have fun with physics. This course focuses on learning how rockets work, and how to determine how high their rockets fly using physics. Tips to optimize rockets against air resistance drag and shortcuts of advanced physics equations will be discussed to determine maximum altitude and find the winner of the class rocket contest.

This course includes an additional \$15 lab supply fee.

Grades 6-8, Week 2

The Great Debate

Let the debates begin! In this interactive class, students assert themselves and express their viewpoints by participating in organized and spirited debates. This course will introduce students to debate techniques and formats utilized in middle school debate clubs and competitions as they learn how to research, discuss, and write about important issues shaping their world. The Great Debate is ideal for those looking to develop and improve their writing, critical analysis and public speaking skills. This summer, everything is debatable!

Grades 6-8, Week 2

WEEK 3: JULY 10-14

Tessellations and Patterns in Math

In this expressive geometry based course, students discover the undeniable connections between art and math in our daily world. Critically examining the artwork of M.C. Escher and his contributions to mathematics, this interactive class will rely upon artistic creativity as students produce individual and class-designed tessellations and tilings with their favorite repeating patterns and colors while reinforcing the building blocks of geometry and the study of shapes.

This course includes an additional \$15 supply fee.

Grades 2/3, Week 3

To Infinity and Beyond!

Students enter the world of Space Camp and Space Flight. Studying the elements of flight, along with the demands of space, students begin envisioning their own design for a vehicle worthy of probing our galaxy and beyond. Students design a blueprint of their ship and begin choosing planets, asteroids, galaxies, wormholes or other phenomena to research, build a project, and present. While working on these elements, all space campers continue to work mini-experiments that build an understanding of planet rotation, atmosphere, and gravity as well as mythological constellations.

This course includes an additional \$15 supply fee.

Grades 2/3, Week 3

Nutrition Club: Fruits and Vegetables

Learn about the powerful nutrients found in fruits and vegetables. What makes fruits and vegetables so nutritious? How do fruits and vegetables help our bodies function, grow and prosper? How can fruits and vegetables be eaten for healthy snacks with optimum nutrition? Participate in interactive activities focused on health and nutrition, and prepare some healthful snacks that you will be able to make at home.

This course includes an additional \$15 class supply fee.

Grades 2/3, Week 2

The Number Devil

The Number Devil is a book about Robert, a boy who discovers the amazing world of numbers, including infinite numbers, prime numbers, and Fibonacci numbers. The Number Devil's visualizations of these higher level math concepts offer a starting point for math projects in drawing, painting, construction and dramatic play. Join us in the rollicking dream world of the Number Devil, where the sky is the infinite limit!

This course includes an additional \$15 supply fee.

Grades 3/4, Week 3

Environmental Science: Sustainable Solutions

Everyone knows 'it's not easy bein' green,' because the most famous Muppet character, Kermit the Frog, told us so. Well, what does it really mean to be green? What are the challenges facing the environment? Why is sustainability important? Most importantly, how can YOU help and make a difference?

Dominican University's scenic campus will serve as the teaching and learning laboratory for promoting sustainability. Throughout the week, students will take on fun titles such as environmental explorers, green ambassadors, composting ninjas, and grewbies (beginning gardeners) just to name a few. Get ready to get your hands dirty with daily lunch waste audits, gardening, recycling and composting; develop a thirst for water conservation; and bee-friend the honeybees! Students will practice environmental stewardship and discover just like Kermit the Frog did, that "bein' green is all you want to be" especially when it comes to protecting the planet and building a better future!

This course includes an additional \$15 supply fee.

Grades 3/4, Week 3

Awesome Artistry

Discover exciting techniques, tools, and concepts in this dynamic creation workshop. Build upon your current skills while exploring the stories and work of Man Ray, Joseph Cornell, Salvador Dali, Alexander Calder and Picasso! Students will engage in brainstorming sessions and developmental exercises, and will gain experience working with drawing, painting, collage art, sculpting and 3-D art.

This course includes an additional \$15 supply fee.

Grades 3-5, Week 3

Chess Academy

Are you curious about chess? Whether you already know how the pieces move or are playing for the first time, this class will cover all the fundamentals of playing a complete game. You will learn how to efficiently deploy your pieces, coordinate your attack and checkmate the enemy king. We will break down the basics required for successful chess, explore famous games to see how the best players in history vanquished their opponents, practice checkmates, solve puzzles and play games together. Empowered with the knowledge that expert players use to win, you will leave your family and friends wondering why they can't beat you anymore!

This course includes an additional \$15 supply fee.

Grades 3-5, Week 3

Forensic Science

This hands-on investigative course introduces forensic science and its applications, techniques, and scientific processes. Students evaluate and consider how forensic scientists collect, analyze and process evidence to solve a crime. Working in a variety of groups and equipped with their detective tools, young scientists determine the types of challenging evidence they gather in order to solve...What happened, and who did it?! Each day new skills will be acquired and used to ultimately solve the classroom crimes of the day.

This course includes an additional \$15 lab supply fee.

Grades 4/5, Week 3

Architecture: How Buildings Stand

Students in this interdisciplinary class will use math, physics experiments and architectural design techniques to prove the basic building principles of architecture. Students will have the hands-on opportunities to design their own dream homes to scale, and also calculate the actual costs involved. The class will also explore the rise of the Chicago skyscraper as well as local architectural styles, such as F.L. Wright, taking full advantage of the wealth of examples that fill the city and its surrounding

neighborhoods.

This course includes an additional \$15 supply fee.

Grades 5/6, Week 3

Introduction to Python

Python is a powerful, expressive computer programming language that is easy to learn and fun to use! In this hands-on computer science course, students are guided through the basics of Python while experimenting with sample projects. Students will learn the basic concepts of Python and create games designed to strengthen their understanding of computer programming and stretch their development of strong computer skills.

This course includes an additional \$15 supply fee.

Grades 5-7, Week 3

Creative Writing

In Creative Writing, students will write a variety of original pieces including short stories and poems. They will read and evaluate written works by professional authors as models for their writing. Students will also practice and apply writing traits including voice, word choice, organization, and sentence fluency. In addition, students will learn about the elements of literature as well as poetic vocabulary and styles. Students will be able to integrate the knowledge they learn into their own writing pieces. At the end of this course, students will share their favorite written pieces and thoughtfully provide feedback to each other.

Grades 4-6, Week 3

SketchUp Architecture: Golden Ratio and Rectangle

Utilizing Google SketchUp, a 3D modeling program, the students will utilize the archetype of the house to learn how to build virtual 3D models. Running parallel to the 3D modeling will be the investigation into the "golden" ratio as it is applied to an angle, rectangle and its incorporation in the Pyramids of Egypt, the Washington Monument, as well as its practical uses in modern architecture. This visual proportion is based on the Fibonacci sequence and it will be investigated as a 3D form, giving framework in the students' model building exercises. To start this course we will move

through a series of virtual model building exercises in a condensed fashion to allow the students to get their SketchUp “legs” under them. This will lead to the eventual exploration and incorporation of the concept of the “golden” ratio to apply to the students’ virtually built objects. The concept of appropriate SCALE in the students’ model building will be a consistent theme throughout the week of virtual modeling. A basic vocabulary of residential and collegiate building parts will be shared throughout the week as well.

This course includes an additional \$15 software and lab fee.

Grades 6-8, Week 3

Physics & Engineering: Newton’s Academy

Ready? Aim! FIRE! After practicing some Newtonian kinematics, students will be able to aim their marble at a target so they never miss the bull's eye. Through careful measurements and thoughtful calculations, whose team will be the most accurate? Students in Newton's Academy are introduced to the fundamentals of projectile motion, free fall, and the acceleration of gravity, and other basics of physics. Conceptual learning is enriched with hands-on, activity based experiments and lessons, such as constructing egg parachutes to understand the effects of drag to gravity and air resistance, constant speed, and changing mass. Keep your eye to the sky and get ready to launch to your fullest potential in this exciting new course!

This course includes an additional \$15 supply fee.

Grades 6-8, Week 3

Exploring Photojournalism

In this visually driven course, students will learn about the importance of photojournalism and the effectiveness of telling a story visually. Students will explore photos from The Great Depression and Civil Rights, to sports and world news. Each student will take a series of photographs, of which they will select five, and write short passages and editorials telling a story. Students will learn to understand the difference between “paparazzi” pictures of celebrities, and journalistic photographs that document emotion, culture, history and time. Note: This course will NOT instruct in photography or how to use a camera. Students will need a digital camera during this course week so images can be uploaded and printed.



SUMMER GIFTED AND TALENTED PROGRAM

Week 1: June 19-23

Week 2: June 26-30

Week 3: July 10-14

Week 4: July 17-21

This class includes an additional \$15 course supply fee.

Grades 6-8, Week 3

WEEK 4: JULY 17-21

Fun with Fibonacci!

Did you know that the beautiful Fibonacci sequence, which was discovered by an Italian mathematician nicknamed Fibonacci, was best known in a famous math problem about multiplying bunny rabbits in the early 1200s? Discover the complex beauty behind the simplified answer, and realize just how much this beautifully intriguing sequence can be found throughout nature and everywhere around us! Students will become familiar with Fibonacci numbers and explore the many ways in which these numbers are expressed in our everyday world. Participating in a series of daily math-based games, cooperative and independent math activities, as well as math related stories, students will gain an understanding of the Fibonacci sequence of numbers. Students in this class will discover the fun in recognizing how Fibonacci numbers relate to our everyday world and the relevance of mathematical operations to these specific numbers.

This class includes an additional \$15 supply fee.

Grades 2/3, Week 4

Jurassic Journeys

In this hands-on class, budding paleontologists study the Paleozoic and Mesozoic eras by piecing together the evolutionary chain and constructing the environment leading to the Age of the Dinosaurs. While researching, students learn the various techniques and tools used by paleontologists using an overview of the "Sue" dinosaur expedition. Students construct molds of life forms of the various eras and practice a light touch for unearthing dinosaur remains in simulated exercises and excursions. What happened to the Dinosaurs? What traces still exist in our time?

This course includes an additional \$15 supply fee.

Grades 2/3, Week 4

Calling All Artists

Develop your drawing, painting, and sculpture skills while examining the methods of master artists such as Claude Monet, Georgia O'Keefe, Alexander Calder and more! Learn and apply technical drawing, painting, and sculptural methods used by artists to

create masterful artistic visual effects and images in this hands-on art course. Students in this class will strengthen their knowledge and abilities in artistic technique and design, as well as cultivate and nurture their creative intelligence.

This course includes an additional \$15 supply fee.

Grades 2/3, Week 4

Math with Art

Learning math through art based projects not only significantly improves student understanding and retention of key math concepts and vocabulary, it also produces significantly beautiful artwork that anyone can appreciate! Math with Art gives artistically inclined students a chance to shine, and it also engages a critical part of the right-brain, tapping into mathematically inclined student abilities to master concepts and vocabulary. Learn math through naturally creative art projects that impressively incorporate color, sequence, design, and number sense.

This course has an additional \$15 supply fee.

Grades 3/4, Week 4

Chemical Reactions

In this hands-on experimental lab course, students explore basic chemical changes and investigate a variety of chemical reactions as they develop their knowledge about the study of matter and the changes that take place: What makes up matter? How does it react and combine with new matter? Students may be surprised to discover chemical reactions that occur in their daily lives, and how it impacts the world around them. Lab safety is introduced, practiced and enforced as a daily classroom expectation.

Students will be encouraged to “think like a scientist” by asking questions, making predictions, setting up experiments to test their hypothesis, collecting and analyzing data and finally, drawing conclusions. Students will discover basic chemistry concepts and experiment with many examples of different changes in matter.

This course includes an additional \$15 lab fee.

Grades 3/4, Week 4

Young Authors Book Club

Students in *Young Authors Book Club* will read, examine, and discuss several forms of writing and genres from authors who possess unique and exemplary writing styles and voice. They will then practice and develop their own writing techniques by creating various writing pieces of their own including short stories, a newspaper article, and a vignette. In this reading and writing intensive course, young authors will share their favorite written pieces and thoughtfully offer feedback to each other based on what they learn in class.

This course includes an additional \$15 supply fee

Grades 3/4, Week 4

Mathopoly and Economics

Learn math and economics while playing Monopoly! Students will begin by learning some basic economic concepts of supply and demand, budgeting and the history of monopolies. Through hands-on application and experiential learning, students will gain a deeper understanding of percentages and probability. Mathopoly students will become strategic thinkers while being introduced to meaningful concepts in investment and capital gains. Students will explore monopolies, the history of the game, and compare and contrast different versions of the game. This class will also introduce students to credit- how to establish it, use it, and the dangers of abusing it. Mathopoly students will develop their social skills and master the strategic art of negotiation. Using their notes, observations, and skills gained throughout the course, students will establish their own strategies for monopolizing the game of MONOPOLY, ultimately creating their own version of the game!

This class includes an additional \$15 supply fee.

Grades 4/5, Week 4

Extra Extra! Read All About It!

Calling all news-hounds! Do love stories? Did you know that they're all around you? Put your noses in the air and catch that scent! Let's track down those stories, hammer out the hard copy, and send it to the presses! It's time to print that paper and let everyone know what the news is all about. This week will be filled with finding all the news that's fit to print, writing up your stories, laying out our copy and finally printing

our Friday edition. If you think you're up to the task, and you love finding and telling stories, then this is the week for you; so step right up and grab your press pass because we've got a deadline to make!

This course includes an additional \$15 lab supply fee.

Grades 4-6, Week 4

Genius of Geometry

In this course, students will extend their knowledge in basic geometry to include proofs, the central activity of high school geometry and all higher level mathematics. Students will create constructions using the classical construction tools, the compass and straightedge, as they justify and prove the relationships they discover with traditional two column proofs. Students will also examine Oliver Byrne's masterful 1847 edition of Euclid's Elements, as well as more traditional translations of Euclid's famous book. Students will finally produce their own portfolios, elegantly composed of their constructions, proofs, and student reflections.

This course includes an additional \$15 software fee.

Grades 6-8, Week 4

Hunger Games: Introduction to Genetics

In this adventurous class of survival of the fittest, students mix science with imagination to create their very own tributes and adversaries through an introduction to genetics. Determining everything from eye and hair color, height, build, and even predisposition to certain illnesses and immunities, students consider genetic principles as they construct and manipulate DNA to create their own version of a fantasy hunger game. Through class discussions, games and activities, as well as artistic interpretations of their genetically modified characters, students can determine the winner of this ultimate battle. What happens when the terrain changes or an expected creature bursts out of nowhere? Anything can happen so who will survive and why? May the odds be ever in your favor!

This course includes an additional \$15 lab fee.

Grades 5/6, Week 4

Improv Sketch Comedy

Want to practice connecting with real audiences, sharpen your awareness, and improve your mental processing? Turn to comedy! This class is meant for students with or without theater backgrounds, just those with a desire to think on their feet and help an audience have a good time. We'll start with the basics of improv: connecting, building on ideas, and creating something new out of thin air. Then, you'll get a crash course in sketch writing and performance. Don't worry if only your mom thinks you're funny; if you're willing to stretch yourself in new ways, and take on a challenge, this class is for you! Let this class be a terrifically entertaining highlight in your summer program experience this year!

Grades 5-7, Week 4

Logic and Critical Thinking

What are the mental tools humans use to solve problems? In this class, we will develop our potential to reason. Through brain teasers, logic puzzles, math/wordplay riddles, mysteries, lateral thinking problems and material challenges, you will hone your problem-solving ability. You will be given an introduction to deductive and inductive logic, and you will explore famous problems faced by ancient and modern cultures and the solutions they uncovered. If you like puzzles and riddles, this is the class for you!

Grades 6-8, Week 4

Physics & Engineering: Building Bridges

Do you like building things? Do you want to learn how to build them better? Students who enroll in this high energy engineering course will learn about the physics of forces and machines, and discover ways to improve their engineering skills and develop into better engineers, no matter what they are building, or what materials they use to build! This course covers various branches of engineering, as well as concepts in forces, friction, and simple machines. Students in Physics & Engineering: Building Bridges work independently as well as in teams, and ultimately compete with their like-minded peer groups to build the tallest, strongest, and most efficient structures employing the principles, concepts, formulas, and laws of physics covered throughout class.

This course includes an additional \$15 supply fee.

Grades 6-8, Week 4

Explorations in Art & Art History

From Cave Paintings to ancient Egyptian art to modern masterpieces from Frida Kahlo and Pablo Picasso, students will explore works of art and their genres, styles and formats that make each unique. This course will take students on a journey through the History of Art, and encourage them to apply classic techniques to their own creations in a hands on studio environment.

This course includes an additional \$15 supply fee.

Grades 6-8, Week 4

Lab Science: Chemistry

This course will take an inquiry-based approach to foster students' curiosity and other scientific attitudes toward lab sciences. Students will build skills in the areas of making observations, planning the best approach to solving problems, developing focus questions, interpreting complex data, and communicating what they learned in reflective writing. This will afford students the opportunity to become more interested and confident in using higher-order thinking, to explore, test, and make their own conclusions about various aspects of science in general, and in chemistry in particular.

This course includes an additional \$15 supply fee.

Grades 7/8, Week 4