

Challenge Camp



A Summer of Fun and Learning, too!

This is our Challenge Camp class schedule for Summer 2023. The schedule is subject to change for compliance with State and County Health Department guidelines.

- 1) **A full day of camp consists of 5 classes and is from 9am – 4pm.** Morning Workshops are 90 minutes (9:00 and 10:30), and Afternoon Classes 60 minutes (1:00, 2:00 & 3:00) are a mixture of sports and enrichment options as campers are encouraged to challenge both their minds and bodies.
- 2) We use camper's **CURRENT GRADE as of September 2022** for class selection.
- 3) There are over 100 STEM & Arts Enrichment Options for you to customize a schedule based on your child's interests. Everything at Challenge Camp is elective, your camper takes the classes you select for the entire 4 week or 3 week session.
- 4) Certain courses may have a materials fee listed. These are typically for class kits or projects.
- 5) If you need assistance or have any questions, please email info@challengecamps.com or call the camp office on 914-779-6024.

Challenge Camp – Summer 2023

1) Science Magic	Session 1	9:00	Grades K-1
Instructor: Michael Donovan		10:30	Grades 2-3

Get ready for a wondrous experience as we learn the science behind these seemingly "magical" experiments! We will explore scientific principles as we experiment with thunder and lightning in a bottle, make eggs bounce, craft frozen silly putty, keep paper underwater dry, create glowing slime, pierce a straw through an apple and much more. This class allows young scientists to think creatively, problem solve and draw conclusions while discovering the magic behind science. Grab your lab goggles and get ready for spectacular science fun!

2) Planes, Trains & Automobiles	Session 2	9:00	Grades K-1
Instructor: Michael Donovan		10:30	Grades 2-3

Have you ever wondered how an airplane flies or what makes a boat floats? Join us on a fast-paced journey as we create various forms of transportation and learn the scientific principles behind them. Campers will apply basic engineering and physics to the construction of soap box derby cars, boats, planes, trains, rocket ships, and more! In this class, campers will be introduced to STEM concepts and learn about the scientific process – making a hypothesis, predicting, experimenting, and drawing conclusions. All powered by rubber bands, propellers, hydraulics, and imagination!

*** Supply Fee: \$30**

3) STEAM Art Studio	Session 1	9:00	Grades 2-3
Instructor: Anne O'Connor		10:30	Grades K-1

If you are an artist with a scientific bent, or a scientist or engineer with artistic inclinations, this is the class for you! Discover how changing the shape of an object can make it stronger as you build bridges, castles, and treehouses. Develop your understanding of potential and kinetic energy, gravity and friction as you design and decorate a race car or construct a beautifully painted marble run. You can capture a rainbow on paper using refraction, create a spectacular volcanic landscape with acid-base reactions, make a mesmerizing sensory bottle exploring the varying densities of liquids and solids, and learn about viscosity while testing the properties of different slime recipes.

4) Pixicade Game Maker	Session 2	9:00	Grades 2-3
Instructor: STEM STAFF		10:30	Grades K-1

Have you ever wanted to create your own video game? Do you like to doodle or draw? In this class you will learn how to make your very own video games using Pixicade! All you need to do is draw, then watch your doodles magically come to life as playable games. Campers will learn to use the exciting new Pixicade App and all of its editing and Power-Up features! This exciting class will teach campers game mechanics and concepts through STEAM and literacy exploration and mini drawing lessons. At the end of the session campers will have a collection of games they created from the stories, characters, goals, worlds, hazards and game challenges developed in class.

*** Pixicade Kit Fee: \$30**

5) The Artist's Palette

Session 1 9:00 Grades K-2

Instructor: Lida Zimmerman

An art palette is full of life! Red roars, blue whispers, and yellow yells about the possibilities and appreciation of color you can achieve. Create rainbows, jungles, landscapes and still life with your new understanding of color theory as a means of self-expression. Our art projects will include various mediums such as paint, crayons, colored pencils, cut paper and pastels. We will look at the works of great artists, highlighting Picasso, Pollack, Van Gogh and Monet to explore how their unique ways of using color have made their works special. There will be an exhibition to showcase the children's art. Remember Da Vinci produced his first masterpiece at age 18... so you will have a head start!

6) If You Give a Camper Art Supplies...

Session 1 10:30 Grades K-1

Instructor: Lida Zimmerman

Everyone loves Laura Numeroff's books "If You Give A Mouse a Cookie", "If You Give a Pig a Party", "If You Give a Moose a Muffin" and many more. Through reading her stories highlighting comedy, fantasy, friendship, kindness and generosity, we will create animal and food art from the books utilizing different mediums. Through model magic, paint, paper, markers and more we will design cupcakes and muffins, pig masks, magical mice, and even some of our own stories and characters!

7) Painting ROCKS!

Session 2 9:00 Grades 1-3

Instructor: Lida Zimmerman

Rock painting is a wonderful way to decorate indoor or outdoor spaces. After selecting and priming your rocks, you'll turn them into animals, foods, images, or even characters like Minions and emojis! The possibilities to enhance nature's wonders are endless. Bring happiness to your home or garden with your one of a kind hand-painted rock collection.

8) The Enchanted Castle

Session 2 10:30 Grades K-2

Instructor: Lida Zimmerman

Join us on an imaginative, magical, fantastical, artistic journey into the land of fairy tales: pixies, princesses, princes, knights and dragons. This literature-based art course explores our favorite fairy tales, myths and magical stories. You will build an exciting castle, storyland or characters complete with gemstone and sparkling royal crowns, fanciful hats and enchanted projects to enhance our storytelling experience. You are cordially invited to our Castle in the Kingdom for our Royal Banquet!

9) Fine Feathered Friends

Session 1 9:00 Grades 2-3

Instructor: Al Pearlman

10:30 Grades K-1

Did you know there are over 18,000 different birds in the world? Did you know that birds evolved from dinosaurs? These feathered friends are some of the most amazing creatures on Earth. In this class, we will become experts on a variety of birds, from the smallest (hummingbird), to the largest (ostrich), to the fastest (falcon), and so many others. You will make your own bird wings to "fly" around camp and build birdhouses for them to live in. Join us to learn about these fascinating feathered friends!

10) A Bug's Life
Instructor: Al Pearlman

Session 2 9:00 Grades 2-3
10:30 Grades K-1

Ugh! A bug! In this class, bugs don't bug us! Are you just "buggy" about the lives of insects? Then come join us we explore the amazing world of entomology. This course will be an exciting hands-on approach to studying insects. Watch caterpillars grow into colorful lively butterflies. Observe a ladybug lay egg on a leaf. Experience the incredible process of how silkworms produce silk. Fun activities include going on an insect hunt, constructing your own butterfly house, creating an insect book, designing a bug mobile, and more!

11) LEGO Tech Junior
Instructor: STEM Staff

Session 1 & 2 9:00 Grades K-2

Use Legos as the inspiration to construct, investigate and communicate like little Einsteins. Students will use models to predict, observe, measure and collect data, experiencing forces, motion, energy, mechanisms and magnetism first hand. They will develop complex problem-solving skills and understand the interaction between forces and motion, measurement, energy, speed (velocity) and weight (mass). This course is will introduce campers to simple machines concepts while building teamwork and communication skills. They will discover basic physical science concepts such as gears, pulleys, levers, and wheels and axles through observation, reasoning, prediction, and critical thinking.

*** Lego Fee: \$25**

12) LEGO Tech
Instructor: STEM Staff

Session 1 & 2 10:30 Grades 2-4

Are you curious about how things work? Do you ask the question "why" often? Do you dream of tomorrow? Then come and enjoy "Lego's Simple and Motorized Mechanisms." This course is designed to give campers an understanding of machines, mechanisms, structures, and mechanical advantage. You will explore the world of technology by studying and building projects that use renewable and alternative energy sources such as wind, solar power, water and your own body. You will investigate energy supply, transfer, accumulation, conversion and consumption through hands-on activities and exciting real life models. You are the engineer, you design, you build, you turn your dreams into reality.

*** Lego Fee: \$25**

13) The Illusionist
Instructor: Joseph Fields

Session 1 & 2 10:30 Grades 1-4

Have you ever wanted to make a coin disappear, read someone else's mind, make solid objects pass through each other or cause a rope cut in two to magically restore itself? Learn how to do this and much more by joining renowned magician Joseph Fields to uncover magic's biggest secrets, fool your friends and be the life of the party. The delightful art of balloon sculpture will also be taught. Transform yourself into an illusionist with a personalized magic briefcase full of tricks!

*** Magic Fee: \$40**

14) Checkmate
Instructor: STAFF

Session 1 & 2 9:00 Grades K-2
Session 1 & 2 10:30 Grades 1-4

An introduction to the exciting world of chess. Chess enables children to develop and enhance their skills in discipline, concentration and patience. Students will learn basic opening, middlegame, and endgame strategies and how to achieve a proper coordination of pieces. Students will learn useful skills such as pattern recognition, calculating and analyzing. Chess notation will be taught in order to review games. Interactive instruction will focus on lecture, discussion and basic strategy.

15) Around the World
Instructor: Rathi Gulati

Session 2 9:00 Grades K-2
10:30 Grades 2-4

Travel around all seven continents in one camp session! The trips are planned, and your tickets have been purchased, but where in the world are you going? Follow the clues on our map to help us get to our destination. You will make your own passport and board a plane to explore each country as you solve the riddles that lead you to them. At each destination you will sample the food, listen to the music, play the games, enjoy the stories, create the art and celebrate the holidays of that country. If you've always wondered about life in faraway lands, then pack your bags as we take a terrific trip around the world!

16) Math Explorations
Instructor: Brandon Pearlman

Session 2 9:00 Grades 2-3
10:30 Grades K-1

Join us in summertime math exploration as we introduce mathematical vocabulary, basic arithmetic and analytical skills for younger numbers fans! In time, fun math activities will include sets, patterns, fraction hunts, multiplication games, logic puzzles, group problem solving, riddles and brain teasers. This high energy class will help develop campers' curiosity, courage and confidence to take on any math challenges.

17) The Spongebob Musical – Youth Edition!
Artistic Director: Anne Pasquale
Musical Director: Regina Talbot

Session 1 9:00 Grades 1-4
10:30 Grades 4-9

The stakes are higher than ever in this dynamic stage musical, as SpongeBob and all of Bikini Bottom face the total annihilation of their undersea world. Chaos erupts. Lives hang in the balance. And just when all hope seems lost, a most unexpected hero rises up and takes center stage. The power of optimism really can save the world! Campers are invited to join the cast and crew of this hilarious musical as we sing, dance, and more, all while telling a story based on the beloved animated series.

*** Script, score, costume and materials fee: \$50**

18) Sleeping Beauty and Magnificent Maleficent
Artistic Director: Anne Pasquale

Session 2 9:00 Grades 1-4
10:30 Grades 4-9

The Classic legend of Maleficent is now brought to life at Challenge! Trouble ensues when the birth of Princess Aurora is celebrated throughout the land and Maleficent the Magnificent is not invited to the festivities. The Wicked Fairy and her Gruesome Ghouls arrive, place a 100 year sleeping curse upon the kingdom that can only be broken by true love's kiss. Let's sing and dance our way through this spell-binding production!

*** Script, score, costume and materials fee: \$50**

19) Minecraft City Builders
Instructor: STEM Staff

Session 1 9:00 Grades 1-3
Session 1 & 2 10:30 Grades 1-3

How are cities planned? Who decides what a building looks like and where it should go? What role do parks and other public spaces play in a city? What are the integral components of cities that they need to function? Campers will plan, design and build a city using Minecraft Education edition! Minecraft will be used to enhance creativity, problem-solving, self-direction, and collaboration skills.

20) Edison Robotics
Instructor: STEM Staff

Session 2 9:00 Grades 2-4

Enter the world of robotics and coding with Edison Robotics. The Edison robot is a powerful, engaging tool for teaching children computational thinking and computer programming in a hands-on way. Campers can immerse themselves in a variety of STEM and engineering projects as they learn to build and invent. Using the EdBlocks and EdScratch software, these programmable robots will open up the world of coding and bring computer science to life. Students will take home their kit to continue exploring with Edison.

*** Robot fee: \$75**

21) Tiny Habitats
Instructor: Anne O'Connor

Session 2 9:00 Grades 1-3

We will use a variety of sculptural materials including clay, paper mache and natural objects to create miniature landscapes in shadowboxes and dioramas. Create a tiny habitat for your favorite animal, such as a turtle pond, a butterfly garden, or a dinosaur jungle. Or you can design alien planets, farms, castles, and more.

22) Little Fashionistas
Instructor: Sherita Cuffee

Session 1 9:00 Grades 2-4

For all aspiring fashion designers, this is the perfect class for you! A professional designer will teach techniques of fashion design by creating fashion illustrations inspired by a mood board. Using individual imagination, fabric swatches, and a color story, each aspiring designer will have fun producing their own fashion garment or accessory to showcase their unique style at the final fashion show!

*** Fashion Fee: \$40**

23) Fashion Reimagined: The Art of Upcycling**Session 2 10:30 Grades 2-4****Instructor: Uvana Doran**

Turn a basic garment into the next season's fashion must-have! Aspiring designers will learn how to take ordinary fashion "basics" and turn them into one-of-a-kind fashion pieces. With the help of a sewing machine, hand-sewing techniques, and decorative trims, designers will learn about the upcycling process to give new life to existing clothing items as a reimagined runway garment!

*** Fashion Fee: \$30**

24) Code Central: Javascript Animation and Design**Session 1 & 2 9:00 Grades 3-6****Instructor: Neil Grand**

Learn coding basics while having fun creating animation, games and sketch art. We will be using a version of Javascript known as p5.js. Javascript is the most widely used computer programming language and the backbone to most web pages. p5.js makes coding fun and easy for artists, designers and beginners. In less than 15 lines, you will be able to create an arrow shooting across the screen or a waterfall of balloons of different sizes and colors bouncing around the screen (and needing to be popped!) p5.js is great for visual learners. You will learn how to create variables, loops and algorithms.

25) Photo Finish**Session 1 & 2 9:00 Grades 3-9****Instructor: Liz Steger-Hartzman**

This exciting class will teach the fundamentals of basic digital photography to capture images throughout the camp or home setting. Campers are required to have a fully charged digital camera or cell phone camera. Each day, Liz will teach you all you need to know to develop your photographic eye. Class time will be spent learning technique, shooting pictures and creating your portfolio for weekly contests. Each camper will receive a personal printed portfolio featuring their best work.

26) Fun with Photoshop**Session 1 & 2 10:30 Grades 5-9****Instructor: Liz Steger-Hartzman**

Have you ever wondered how funny pictures are made? Have you seen a cat's head looking natural on a person's body? What about the imperfect photo made perfect? In this class you will learn about all of the tools to enhance your pictures and make fun photos. Topics include basic image editing, transformation, retouching, enhancement, and compositing taught by a professional photographer. Campers will work on their own portfolios and participate in group projects. We will be working in Photoshop CC and students participating in Photo Finish will learn advanced techniques.

*** Photoshop Fee: \$50**

27) Junior Entrepreneur
Instructor: Sid Jain

Session 1 9:00 Grades 3-5
10:30 Grades 5-9

Have you ever wanted to run your own small business and make your own design, plan, price and sales decisions? Campers will enter the “shark tank” and become entrepreneurs building an idea from scratch and ending with a business plan. You will generate a product or service and decide how to market and advertise. After honing your analytical, logical and communication skills, you'll confidently present your plan to "investors" from Wall Street and raise play-money. Learning practical and operational aspects of the stock market, campers will determine the most viable businesses. Entrepreneurs will also brainstorm ideas for the Challenge Cares Carnival. The money raised will be used for the charitable entity chosen by Challenge Camp.

28) Op Art
Instructor: Ana Saura

Session 1 9:00 Grades 4-9

Op Art, also called Optical Art, is a compilation of bewildering images which play tricks on your eyes and brain. These fascinating visual illusions are a reminder that our senses are imperfect, and our perception of the world is often distorted. We will examine various types of Op Art, from M.C. Escher to the more modern Gianni Sarcone, and discover how to make these amazing paintings and drawings that trick the senses. Your original optical wonder artwork will thrill all, because NOTHING is what it seems in the Museum of Illusions!

29) I Want My Mummy
Instructor: Ana Saura

Session 1 10:30 Grades 2-6

Travel back in time to the land of the Pharaohs and explore the wondrous pyramids and miraculous mummies. Learn about the life of the Egyptians of thousands of years ago filled with unbelievable riches and golden jewels. Create fascinating artifacts from this ancient civilization such as paper plaster carvings, maps, pyramid models, mummy cases, jewelry and paper Mache mummies. You will write in hieroglyphics and recreate it on papyrus that you will craft. Come join us in an artistic world of mystery, wonder and intrigue!

30) Collage Painting
Instructor: Ana Saura

Session 2 9:00 Grades 2-6

Join us to create a great masterpiece using the unique process of painting and paper collage! Campers will create original drawings of animals, figures or portraits, which will dazzle when painted and completed with colorful papers from magazines or newspapers!

31) Fine Art Finds
Instructor: Ana Saura

Session 2 9:00 Grades 3-9

Design your very own wooden keepsake or treasure box to brighten your bedroom! Inspired by Monet and Van Gogh campers will exhibit creative freedom as they prepare, sand, paint, decorate and gloss their unfinished keepsake box. We'll use paint, art images, decoupage, and more. This cool art class is perfect for campers to illustrate fine art creativity and uniqueness to storing their personal items.

Material Fee: \$25

32) Stop Motion Laboratory
Instructor: Anne O'Connor

Session 2 10:30 Grades 3-6

Whether you love drawing, painting and sculpture or whether you would like to write stories or act out dramatic scenes, you will have fun exploring the possibilities of animation. Spend a little time learning the basics of handling the camera setup and stop-motion app, then let your imagination take off as you bring your drawings to life or create your own 3-D characters with modeling clay. You can also use small toys, or even animate real people in your films. Students will receive a digital copy of their films.

33) The Illusionist 2
Instructor: Joseph Fields

Session 1 & 2 9:00 Grades 4-9

Would you like to perform like Criss Angel, David Blaine, and David Copperfield? If you would, this is your chance to discover the magic secrets that these and many other professionals use to baffle audiences worldwide. Join Joseph Fields this summer and learn the secrets, the sleight of hand and the proverbial tricks of the trade that helped make these professionals famous. Imagination, individuality and creativity will be encouraged to develop a personal magical act with polished showmanship. Extraordinary and advanced balloon sculpture techniques will be learned! Advanced magical secrets of illusion, levitation and sleight-of-hand will highlight this course as well as presentation and performance before an audience. Enhance your skills and transform yourself into a master illusionist with your personalized magic briefcase full of tricks.

Magic Fee: \$50

34) Drone Flight School
Instructor: Drone Cadets

Session 2 9:00 Grades 2-5
Session 1 & 2 10:30 Grades 3-9

This beginning drone class will explore the various uses of drones. They can be used for delivery, surveillance and security, aerial photography, filmmaking and more! In Drone Flight School, campers will receive practical, hands-on instruction that gives them the exciting experience of flying a drone through obstacles, while learning the FAA required rules and safety procedures. As their skills progress, they will begin coding autonomous drone flight to promote further STEM learning and provide real-world career insights. Campers will fly and take home their pre-assembled drones! Drone Cadets helps spark the bright young minds of students of all ages and light up new pathways for further scientific exploration.

Drone Fee: \$350

35) Dash Robotics
Instructor: STEM Staff

Session 1 9:00 Grades 4-5
10:30 Grades 2-3

Woohoo! Meet Dash, a real robot that will make learning to code fun. Responding to voice, navigating objects, dancing, and singing, Dash is the robot you always dreamed of having. Campers will use Wonder, Blockly, and other apps to create new behaviors for Dash — doing more with robotics than ever possible. Let Dash open a canvas for exploration and collaboration by unleashing your creativity as you program Dash to greet you, deliver a message to a friend, follow you on a journey, and become a true partner in fun.

*** Robot Fee: \$175**

36) Math-letics**Session 1****10:30 Grades 3-6****Instructor: Brandon Pearlman**

The speed of a runner, the number of points scored, a batter's average, a goalie's save percentage . . . Math is everywhere in the world of sports and a fun way study numbers and logic in this hands-on and engaging class. Campers will sharpen your pencils and math skills with numerical sequences, logic puzzles, brain teasers and Sudokus. We will play Fantasy Baseball to understand and analyze statistics. Campers will draft their own baseball players and track their player results. By learning about the mathematics and statistics behind baseball, basketball, soccer and more, you will find you better understand the sports you love.

37) Quiz Show**Session 1****9:00 Grades 4-9****Instructor: Brandon Pearlman**

How much do you know about movies, history, sports, music, science, and geography? Impress your classmates in our competitive and fun games of trivia knowledge! Campers will work in teams to be the champions of the day, week and even entire camp session. You'll even have a chance to write some of your own questions to stump your classmates! Join us for this fun, fast-paced experience that will test your knowledge of academic subjects, pop culture, current events and more!

38) Culture Club**Session 1****10:30 Grades 3-6****Instructor: Rathi Gulati**

Get ready for a multi-sensory adventure, where we will travel to exotic cultures. Campers will listen to music, taste new flavors, learn a few steps of a dance, admire the beautiful art, and read a bit of poetry or literature from each of these countries. Students will be encouraged to research their own cultural heritages and share what they have learned by bringing in an "artifact" that has special meaning to them. Join us for an amazing cultural exploration.

39) Digital Film Academy**Session 1****9:00 Grades 6-9****Instructor: Tony Ely****10:30 Grades 4-5**

Let's make movies! In this interactive digital movie making class students will participate in the full creative process of developing an original professional short film. With a professional Director leading the production, campers will be part of a high-quality collaborative team effort to brainstorm ideas and costumes, write, location scout, shoot, direct, act and edit their film. Campers will gain an enhanced understanding of digital media while learning appropriate and responsible use of technology to become good digital citizens. We can't wait to see the premiere!

Film Fee: \$50

40) Escape Room
Instructor: STEM STAFF

Session 1 9:00 Grades 4-9
10:30 Grades 4-9

Trapped in a room with a group of friends with only one way out, you must search for clues and solve several kinds of puzzles and riddles to plot your great escape. When the challenge has been mastered, you will be guaranteed laughter, a sense of accomplishment and a new respect for your classmates and their abilities. Groups will complete a series of escape room challenges together and will then design their own escape room models and games for others to solve. This is an experience that will be remembered for a lifetime... assuming you ever make it out!

41) Challenge Makerspace
Instructor: Michael Nathenson

Session 1 9:00 Grades 5-9
10:30 Grades 3-5

Are you eager to create and experiment utilizing engineering principles? Challenge Camp Makerspace provides a creative way for students to design, experiment, build, and invent in a science, engineering and tinkering environment. In this project-based STEAM class, campers will work in a collaborative environment and develop their problem-solving skills. Woodworking, electricity, as well as force and motion will all be explored through hands-on projects. Sample activities may include building catapults, model electric cars and creating our own electric motors.

Maker Fee: \$100

42) Cardboard Engineering
Instructor: Michael Nathenson

Session 2 9:00 Grades 5-9
10:30 Grades 3-5

Enter the Makerspace to engage in a fan favorite medium... Cardboard! Campers will invent and create a variety of projects utilizing simple yet versatile cardboard as a base. Campers will learn and apply electrical, civil, and mechanical engineering to develop sample projects such as mini cities, foosball/carnival games, suits of historical armor, and even bridges capable of withstanding hundreds of pounds. Art, science, and engineering will come together to provide students an interdisciplinary way to indulge their passions in our collaborative learning environment.

Engineering Fee: \$75

43) Speakers Corner
Instructor: Rathi Gulati

Session 1 9:00 Grades 4-9

Learn the art of persuasion in this writing and public speaking course. We'll work on organizing your thoughts and conveying them in a way that grabs attention and leaves a strong impression. We will brainstorm ideas on topics to consider, for example: If you could make one major change to your school or community, what would it be and why? The class will divide into groups to compare the pros and cons and develop a strategy for their preferred option. Through persuasive speaking methods we will develop the skills to put together a convincing argument. Various tools such as Keynote and poster boards will be used for creative ways of presenting a position. We will help boost confidence by focusing in on key aspects of good public speaking: eye contact, facial expressions, body language, and even tackle how to deal with nervous energy. At the end of the session students will present their individual ideas and have group final presentations.

44) Beautiful Biology
Instructor: STEM STAFF

Session 1 9:00 Grades 3-5
10:30 Grades 5-9

Take a fascinating journey into fun and easy experiments focused on biology, the science of life! We'll explore Gummy Bear Osmosis, Colorful Capillary Action, Flower Dissection and more! Learn what DNA is and have fun extracting it in our lab. Learn about fingerprints and cells, and what makes each of us unique and what binds us together so closely. Join us to learn what makes biology so beautiful!

45) Adventures in the Lab
Instructor: STEM STAFF

Session 1 9:00 Grades 5-9
10:30 Grades 3-5

Are you fascinated by science? Join us for an adventure into the scientific world where we will perform hands-on experiments! We will learn about different chemical compounds, conduct demonstrations to observe different chemical principles, and make science come alive. We will learn about exothermic reactions by making elephant toothpaste, rainbow volcanoes, Oobleck and more! See the world with amazement and wonder as we embark on our lab adventures!

46) Radical Chemistry
Instructor: STEM STAFF

Session 2 9:00 Grades 3-5
10:30 Grades 5-9

Calling all chemists! In this course we will learn about how chemistry plays a role in our everyday life. Learn what Elements, Atoms, Molecules and Ions are. We will learn about crystallization by studying rock candy, exothermic reactions by making elephant's toothpaste and acid base reactions by blowing up a balloon with a water bottle. Have you ever wondered how a raw egg would look without its shell, how to make a lava lamp or what type of fruit is the most acidic? Then this class is for you! Young scientists can join us in the lab for an enlightening, hands-on experience and see the world with amazement and wonder!

47) HACKS – Creative Problem-Solving
Instructor: STEM STAFF

Session 2 9:00 Grades 5-9
10:30 Grades 3-5

A HACK is a strategy or technique for managing one's time or activities more efficiently. HACK-A-THONS, which don't necessarily involve technology, allow children to test their skills and to gain experience working with a team, solving actual problems. Many of us use "life hack" tricks every day, from using a binder clip to seal a bag in the kitchen, to tying a colored ribbon on luggage or using an eyeglass case to hold charging cables in our backpack. We will analyze the characteristics of good life hacks and even create new ones of our own using a maker mentality. We will also be presented with Hack-a-thon team challenges to develop our problem solving and teamwork skills. As we collaborate and form inventive solutions to real world problems, students will learn that their ideas should be interesting not only for them but also for potential consumers, government entities, or even investors.
Hacks Fee: \$75

48) The Great Debate**Session 2 9:00 Grades 4-9****Instructor: Sara Teimor Charles**

Life, Liberty, and the Pursuit of Happiness...these are the rights that all Americans possess. But how does our government put these ideals into action? Public speaking and the ability to articulate a position are critical to ensure that your voice is heard and you have a platform to share your ideas. In this class, we will become the government. You will research and propose a bill about an issue that is important to you, like the environment, schools, or health care. As a member of the "House of Representatives", you will explore how a bill becomes a law and engage in passionate debate. Can you convince an audience in the face of informed, persuasive competition, or take a considered approach to both sides of a position? Can you think on your feet and bring your words to life as you tailor your performance to an audience? Get ready to be civically engaged in the great debate!

49) Rebels With a Cause**Session 2 10:30 Grades 4-9****Instructor: Sara Teimor Charles**

Do you dream of growing up and changing the world? Let's explore some of the powerful and extraordinary change-makers in our world: rocket scientists, C.E.Os, the Presidents of the United States, and more! After learning about inspirational people in our society, campers will get to write and illustrate their own story about a powerful person that made a difference. This class will culminate with campers creating presentations to showcase what they've learned about their "rebel with a cause!"

50) Catwalk Couture**Session 1 10:30 Grades 4-9****Instructor: Sherita Cuffee**

Do you have interest in learning the art of fashion design from a professional designer? After illustrating fashion design ideas/concepts using a mood board and color stories, each design will be brought to life utilizing hand and machine sewing. This imaginative course will immerse aspiring designers into the fashion design process, from sketch to sewing, to create a unique couture garment to be modeled in the final fashion show.

Fashion Fee: \$50**51) Sew What?! Sewing Bootcamp****Session 2 9:00 Grades 4-9****Instructor: Uvana Doran**

Do you dream of becoming a fashion designer? In this class, students will be introduced to the process of creating clothes! Sewing students will learn to draft, pin, and cut a sewing pattern, how to use a home sewing machine and even how to take measurements. Students will complete a final project involving the designing and sewing of shorts, pajama pants, or a reversible tote bag. All items will be personalized to show off each camper's unique style. Project Runway, here we come!

Fashion Fee: \$50

52) 3D Printing Lab
Instructor: STEM STAFF

Session 1 & 2 9:00 Grades 3-9
Session 1 & 2 10:30 Grades 3-9

This course is designed to introduce 3D modeling and printing techniques to beginners. Campers will learn an overview of the components of the printer and how the process works. They will learn how to navigate a variety of 3D design software including the popular TinkerCad, Cura and Meshmixer to develop their own 3D models. In this project-based course the students will learn the possibilities for creativity are endless and will take home a printer and filament to continue inventing.

3D Printer and Filament Fee: \$400

53) Drone Racing Club
Instructor: Drone Cadets

Session 1 9:00 Grades 5-9

Drone Racing is one of the hottest and fastest growing esports in the nation. In this exciting technical course, we will build a First Person View (FPV) Racing Drone. Campers will learn how to fly from an FPV perspective, as if you were in the cockpit and practice flying and racing techniques, including races of our own! With practice, campers will master this advanced flight skill and begin racing in real life. We will address safe and ethical uses of drones and learn to be responsible drone operators and owners. Each camper will assemble and keep their own fully-functional drone and FPV goggles. Ready, set, drone!

*** Drone Fee: \$550**

54) Code Central: Introduction to Java
Instructor: Neil Grand

Session 1 & 2 10:30 Grades 4-9

This course aims to teach the basics of one of the most powerful and wide spread programming languages—Java. You will learn about variables, loops, control structures (if/then logic), arrays and how to write classes. You will learn to think both algorithmically and creatively. We will use Java to calculate PI, and solve problems – for example, did the Native Americans get a good deal when they sold Manhattan to the Dutch for \$24 in 1626? We will create games like Mad Libs, guess the state capitals, and how to convert English into Pig Latin. There are no prerequisites other than a desire to learn.

55) Minecraft: Challenge Camp Edition
Instructor: Geoffrey Byrne

Session 1 & 2 9:00 Grades 4-9
Session 2 10:30 Grades 4-9

Minecraft combines easy to use graphics and game play coupled with multi-player in several different modes accessible to learn at different levels. Journey from simple game play, to more complex world creation and server hosting. Campers will work together to create their own computer-generated worlds with an almost infinite combination of primitive mechanical devices, electrical circuits, and logic gates built with an in-game materials known as Redstone. Using teamwork to create a world from the ground up, Minecraft will serve as a gateway to enlighten students how to safely and securely utilize technology involved in game creation. Many aspects of the computer science and information systems worlds will be introduced including, but not limited to, software programming, overall concepts and principles of networking and the hardware required in building these seemingly complex systems.

PLEASE HAVE A CURRENT MINECRAFT ACCOUNT PRIOR TO THE START OF CAMP

Session 1 10:30 Grades 5-9

Computer Fee: \$850

Session 2	9:00	Grades 3-5
	10:30	Grades 5-9

Session 2 **9:00** **Grades 6-9**
 10:30 **Grades 4-6**

Session 1 & 2 9:00 -4:00
Grades 9 & 10

Course Fee: \$1,000 Session 1 or 2
\$1,750 Sessions 1 & 2

Afternoon Challenge Course Selections

1) ADVENTURES IN ART

This class is for children who love to experiment with art materials. We will emphasize techniques that create surprising and exciting effects and rich textures, such as marbling, monoprints, painted-paper collages, melted-crayon drawings, scratchboard and more. We will draw, paint, sculpt, squirt, swirl, roll and stamp and let the element of discovery enhance our creativity. By creating animations with some of our drawings and collages, we will see our art in motion!

2) ANIME-TION

The art of cartooning is full of creative expression, humor and fun. Join us to learn techniques of cartooning including sketching and use of color. You will learn to draw familiar faces such as Spiderman, Mickey Mouse and the Simpsons. Next, we will dive into the ultra-modern art of Japanese anime. The wildly popular anime characters have larger than normal eyes, exaggerated expressions and a stylized type of design. Your original anime illustrations will reflect your own personality, imagination and artistic style!

3) AQUA CHAMPS

Campers will learn to swim and have an introduction into the world of sports in this combination class. Swim instruction will occur on Mondays, Wednesdays and Fridays in the Iona athletic center indoor pool. On the alternate days, campers will participate in sports activities designed to enhance and develop motor skills, coordination and sportsmanship through active play and instruction. Campers must provide a swim suit, towel, goggles and Ziploc bag for wet items on swim days.

4) ARDUINO APPLICATIONS

What is a robot without a brain? Why is a smart phone so smart? How do you make your computer turn a motor? All of these are a result of microcontrollers, the next step in computing and technology. Here is an opportunity to learn how to use microcontrollers using the Arduino platform. Learn the basics of electrical engineering and programming as we build a number of projects using a basic starter kit and your imagination!

- **Arduino Kit Fee: \$75**

5) ART ON THE MOVE

So much fun for our littlest campers! We will begin each class with a themed dance such as "Hawaiian Luau" or "Animal Safari" and then create an art piece related to our dance using clay, colored pencils, cut paper and more.

6) AWESOME ILLUSIONS & PUZZLES

More than meets the eye! In this awesome workshop, inspired by New York City's Museum of Illusions, students will explore how neuroscience explains different optical illusions. We will use scientific principles to create our own using color, light and patterns. In this workshop campers will create puzzles and illusions that will both inspire and boggle the mind! Campers will create deceptive and misleading brain images like impossible waterfalls, visual paradoxes, mind-bending patterns, mirror illusions and create trick photography to provide a boost of brainpower and ignite your logic skills!

7) A BAKER'S DOZEN - INTENSIVE

Pack your ingredients and let's embark on an international baking tour! In this class, young bakers will learn to bake treats from around the world, such as mochi cake, biscotti, lava cake, brownies, cream puffs, shortbread, and flan. These classic desserts will be delicious beyond measure!

- **A Baker's Dozen Fee: \$200**

**** This class is a double period intensive elective**

8) BASKETBALL

Campers will learn the FUNdamentals of basketball. Through drills and instruction campers will have a great time practicing dribbling, shooting, jumping and game play that emphasizes teamwork and sportsmanship.

9) BOLD POP DANCE

This vibrant dance class blends the energy, freestyling, storytelling and power of hip hop and breaking, with jazz technique, while embracing the creativity of the dancers. Students will develop musicality, choreographic skills, strength, teamwork and confidence both onstage and off. A signature of all BOLD Arts programs is that each person's individual strengths and personality shine through the work we create together. All students will have the opportunity for a virtual performance at the end of the session. *Taught by BOLD Arts.*

10) BONJOUR – CONVERSATIONAL FRENCH

"Oui, s'il vous plait!" Our discussions will be based on the individual French language proficiency and interests of the students. We will build upon grammar, pronunciation through various conversation themes. The interactive format using a wide variety of mediums will raise the students' level of confidence in speaking the language.

11) CAINE'S ARCADE

Inspired by the documentary film *Caine's Arcade* this class will be amazing, creative and fun. We will use cardboard and a variety of found and recycled objects to create our own carnival games style arcade. Campers will develop an understanding of the physics and engineering behind their creations. The finished projects will be used in conjunction with the Junior Entrepreneur "Care"-nival to raise money for this year's charity.

12) CHESS CHALLENGE

Chess is a tremendously popular activity at Challenge Camp! Come to play individual and team games against opponents of all ages and abilities. Develop your own chess strategy and tactics through supervised play.

13) CLOSING BELL

In this introduction to Wall Street class, students will build a virtual stock portfolio and compete for the "best stock picker" bragging rights. After examining the activity at the NYSE and NASDAQ each day, we will learn analytical and operating aspects of the stock market. We will begin by evaluating and comparing stocks. We will review our portfolios daily and debate our purchases while learning to use tools to assist in our decisions to buy, sell or hold individual companies. By understanding how the stock market works, we will know the pros and cons of investing and how to buy low and sell high!

14) CODE CENTRAL: ADVANCED JAVA

This is a course for campers with some knowledge of programming and Java. We will broaden that knowledge through lessons about object-oriented design and inheritance plus a wide variety of challenging applications and games. What we learn and do together will be driven by the level of the campers' knowledge and desires. Every camper will be given a variety of programming challenges to solve. Examples include making games like hangman, battleship, various card games or tic tac toe. Creative techniques are required to solve the change return problem and the calculation of Armstrong numbers in a given range.

15) CODE CENTRAL: EXCEL VBA

Excel is the most widely used technology platform in the world. Knowing Excel is one of the most critical skills any worker or student can have. VBA (Visual Basic for Applications) is the programming language embedded in Excel and is used widely in all fields, especially the business and financial worlds. In this course, students will get an introduction to Excel plus a deep dive into the VBA programming language. They will learn how to create variables, loops, control structures (if/then logic) and arrays. We will use this knowledge to create a chess board, a boggle board, dice games, a Yahtzee game and other games of our campers' imagination.

16) CODE CENTRAL: PYTHON

This course aims to teach the basics of Python, an object-oriented programming language. Perfect for beginning programmers or budding technologists to squeeze programming power and fun out of their computer, Python uses a simple syntax and has an easy learning curve. Learn about variables, loops, decision statements, and other basic programming concepts using this easy-to-read programming language. The coding principles will provide the building blocks to learn programming languages in the future. There are no prerequisites other than a desire to learn.

17) CODE CENTRAL: SCRATCH GAME CREATORS

Learn coding basics while having fun creating games and animation using the online program known as Scratch. Campers will learn to develop algorithms, use variables, loops and control structures (if/then logic) to create a multi-media experience. Scratch is a drag and drop website which makes programming easy, fun and painless. Campers will create games such as Flappy Birds, Space Invaders, Shoot 'em, Pong, Maze and other games of their own imagination. Your games will have obstacles, dragons, special ghosting and color effects, timers and scoring. Campers will also make beautiful, animated art work like whirling spirals, planets circling around the sun in the solar system, and spin art.

18) CODE CENTRAL: SCRATCH JR

In this class, young campers will be introduced to coding basics using the Scratch Jr. software. Scratch Jr. is a visual programming language that enables students to create games and animated projects. Using visual code blocks, Scratch Jr. guides you through programming concepts – such as loops, conditional logic, sequencing, and algorithmic thinking. Campers will unleash their creativity, innovation, and curiosity as they develop coding skills.

19) CONFIDENT CHEFS

Designed to give campers confidence in the kitchen. Learn how to cook Sunday breakfast, make healthy delicious sandwiches, special July 4th cookout hamburgers, and celebratory salads for your families! Treat them to simple but decadent desserts such as red velvet cupcakes & chocolate chip cookies. Campers will learn how to prepare ingredients, organize their work space and use tools of the trade. Our confident chefs will learn the “flavor shoebox” and how to properly season meals while developing their critical palate. Bon appetit!

- **Confident Chefs Fee: \$100**

20) CURIOUS CHEF

In this class, campers will learn the basics of cooking and healthy eating. Cooking is math, science and an art. Chefs will learn kitchen organization, following directions, measuring, and preparing ingredients to complete a recipe from start to finish. Experience making simple foods from scratch and create the foundation to be good chefs and more informed eaters.

- **Curious Chef Fee: \$100**

21) DANCE A STORY

In this class, young dancers will bring books and stories to life. Children will dance along and be given a prompt to create their own choreography, using the story. We will Cha Cha and Tango with *Giraffes Can't Dance*, create flashlight solos with *Firenze's Light*, dive into a painting with *Flyaway Katie*, and more! This class is active, interactive, and filled with opportunities to create. *Taught by BOLD Arts.*

22) DIGITAL COMICS

Digital graphic comics and stories are extremely popular with campers of all ages! In this engaging digital storytelling class, we will read, write and illustrate our own comics and designs. Beginning artists are more than welcome as there is themed art from you to pick from, incredible animation and loads of templates to start story building with! If you have an idea, you can quickly create visually dazzling content for your story. Create and animate your characters, word balloons, sound effects and bring your original stories to life on screen!

23) DOODLE DRAWING

Doodling is a visual language. Campers can create extraordinary artwork with intricate lines and the absence of much color. Using pencils, pens, Sharpies and paper, you will learn how to doodle designs of animals, objects and faces. You will be amazed at the accuracy and whimsy in your drawings using concentration, simple lines, shadows and your imagination.

24) DRONE SOCCER: TEAM ROBOTICS TAKE FLIGHT

Drone Soccer is a fast-growing ESport. It is a thrilling indoor team sport played with radio-controlled quadcopters in protective exoskeletons designed for collisions. Teams of up to five-players face off in a netted arena where they ram and block the opposing team to prevent them from scoring. But before pilots can compete, they must first learn to build, program, fly, and repair high-performance drones. Learning these engineering skills can lead to exciting careers in technology and aviation. To learn more about this emerging sport, visit <https://www.dronesoccer.us/>.

- **Drone Soccer Fee: \$150**

25) DUNGEONS & DRAGONS

If you can imagine and think of lands and magical creatures, then you can play Dungeons and Dragons. Think of yourself as a character in a book. Imagine magical places and items – many surprises lie ahead. For campers with significant D&D experience, this year we have created a separate Advanced section.

26) EDISON ROBOTICS

Enter the world of robotics and coding with Edison Robotics. The Edison robot is a powerful, engaging tool for teaching children computational thinking and computer programming in a hands-on way. Campers can immerse themselves in a variety of STEM and engineering projects as they learn to build and invent. Using the EdBlocks and EdScratch software, these programmable robots will open up the world of coding and bring computer science to life. Students will take home their kit to continue exploring with Edison.

- **Edison Robot Fee: \$75**

27) ESPORTS ARENA

Esports and casual competitive electronic gaming is a billion-dollar industry, and high schools and colleges are responding to the growth of this field by creating programs that can lead to career pathways. Esports provides a sense of community, children learn to create and follow strategies, work cooperatively with teammates and can foster digital citizenship skills and good sportsmanship. Join us in the arena as we delve into a variety of age appropriate Esports titles and genres including Rocket League, Fortnite, Among Us, League of Legends, Starcraft and more!

- **Esports Fee: \$75**

28) FANTASTIC BEASTS

Create characters using a variety of art materials, including felted wool (great for making soft cuddly animal buddies), paper-mache, clay, and more. Then learn how to make them come to life and fly, walk, run or swim using stop-motion animation techniques. Work with your friends or on your own to film your beasts' adventures. This class will focus on sculpture and painting techniques in addition to the animation projects.

29) FASHION ILLUSTRATION: SKETCH SCHOOL

Calling all fashion designers! In this class, students will be introduced to beginner fashion illustration techniques. Students will learn basic skills of the trade, such as drawing a fashion croquis (or illustration) and learning to illustrate movement. All student designers will create a fashion mood board to display their creations. Join the fun and live out your passion for fashion!

30) FENCING

En garde! Learn the exciting Olympic sport of fencing! Parry, cut, and lunge, as you improve strength, coordination, focus, balance and more. Fencing is a high-speed, exhilarating sport that relies on quick wits and cunning, and engages the entire body along with the mind... most importantly, it's FUN!

- **Fencing Fee: \$100**

31) FINDING NEMO

Secure your goggles as we dive into the ocean and learn about the fascinating world of sea life. All oceanographers will use a myriad of materials including color paper, paint, shells, glitter, found objects and personal treasures to create a beautiful sea sculpture mobile inspired by life under the sea.

32) GALAXY QUEST

Drawing inspiration from the Mars Rover and Webb Telescope, during this course we will discuss the development of humanity's understanding of the solar system, examining contributions by Aristotle, Ptolemy, Copernicus, Galileo, Newton, Einstein and others. What makes Earth different from all other planets? What has NASA discovered about Mars' suitability for life? What are super moons, eclipses, asteroids and comets? The Hubble Telescope and the Kepler Mission revealed over 2000 exoplanets around stars other than the sun. Create your own solar system incorporating our knowledge of the Milky Way, planets, moons, stars and other galaxies. We will debate if life really can exist on other planets and when humans will be able to visit them!

33) GRAPHIC DESIGN STUDIO

In this class, we will explore the methods which graphic designers use to communicate their ideas with impact, including playing with positive and negative space, scale (size,) color, typography and much more. Explore fun activities that will stimulate our creative problem-solving skills. We will discuss examples of creative work by professional designers, get our ideas flowing by making drawings and collages and then work to complete our designs. Projects will include T-shirt designs, posters, and animated graphics.

- **Graphic Design Fee: \$50**

34) IT'S A SMALL WORLD

Through music and songs, we will discover many countries and their musical culture: Korea, France, Ireland, Africa and the United States. You will build a likembe, also called kalimba and make your own "one of a kind" instrument out of recycled materials.

35) JUNIOR VARSITY

Specifically designed for 5-7 year olds, this sports activity and recreational games program is a wonderful introduction to the world of sports. All activities are designed to enhance and develop motor skills, coordination and sportsmanship through active play and instruction. Some of these activities include: running games, parachute challenges, throwing, catching, kick ball and more.

36) KITE RUNNERS

Kite flying is a very popular pastime in many countries including China where they were invented and which hosts the largest international kite festival on Earth. Colorful designs often emulate flying insects, birds and other animals. Campers will build artistic Chinese inspired life-size and decorative kites to fly in the Challenge Camp sky.

37) K'NEXplorations

This is a hands-on building experience designed to promote creativity and problem-solving skills. Mathematical and Scientific design projects will be integrated to develop skill in construction using Rods and Connectors.

38) KNITTING NOOK

Knitting began centuries ago in the Middle East spread throughout Europe and the United states. Men, women and children knit all over the world and now you can learn a modern and fun style of this ancient art. For beginner or experienced knitters, once you master the knit and purl stitches you will create an adorable stuffed animal of your own.

39) LEGO MINDSTORMS

Bring the fascinating world of robotic technology alive with Lego Mindstorms EV3 Robots! This robotics course teaches the students the principles of assembling and operating an interactive Lego Robot. Mathematical standards will be addressed as well as hands on building of mechanical and electrical systems in robotics. Accurate measurement, geometric relationships, problem solving and reasoning skills will be stressed for success. Students will bring science to life utilizing many possible Lego designs in addition to their own creations.

40) LEGO WEDO ROBOTICS

Introduce robotics and computer programming with the award-winning Lego WeDo! This is a hands-on, challenging and fun way to learn about robots! This class will expose students to engineering, logical thinking, computer programming and team working skills. Campers will build a variety of robots with Lego's and program their models to complete challenges, enhancing creativity and problem-solving abilities.

41) MAGIC: THE GATHERING

Back by popular demand! A game battle in which you and your opponent represent powerful sorcerers attempting to drive each other from the lands of Dominia. Your deck holds your tools: creatures, land, spells and artifacts.

42) MARVELOUS MOSAICS

Explore the ancient art of mosaics in this fun and educational class. Broken pieces of colorful tile will be transformed into your artistic vision. The possibilities are endless for campers to create a mosaic masterpiece!

43) MINDFUL ART

Campers will create works of art that encourage and facilitate a relaxed, peaceful state of mind. In a friendly, creative, judgment free zone campers will be encouraged to tap into and connect with their mind, body, and soul that they will express through visual arts. Campers will experience working in many mediums including colored pencil, paint, collage, and more. They will explore making mandalas, gratitude jars, dream catchers, dream paintings and beyond.

44) MINI NINJAS

In this active class designed for younger campers, they will have fun exploring movement through creative elements. Utilizing props and obstacle courses, all will be physically challenged in a multitude of ways, helping them gain body awareness and coordination. Campers will explore a range of movements including dynamic jumping, leaping and running as well as more controlled balance and stretching.

45) MOMA PAINTING

A painting class inspired by the great impressionistic masters, we will create four unique paintings studying different techniques of color, drawing and paint style. Drawing on techniques from Claude Monet, Vincent Van Gogh, Auguste Renoir and Edgar Degas, we will paint and draw our own beautiful works.

46) NINJA WARRIOR

In this active class, campers will have fun exploring movement through creative elements. Utilizing props and obstacle courses, all will be physically challenged in a multitude of ways, helping them gain body awareness and coordination. Campers will explore a range of movements including dynamic jumping, leaping and running as well as more controlled balance and stretching. Speed and endurance will be improved as well as elements of engagement and focus. The goal of this class is to build body confidence and have fun.

47) ORIGAMI

The term origami comes from the Japanese words “Oru” meaning “folded” and “Kami” meaning “paper.” It is an ancient art form spanning over 1000 years that has evolved into an international creative pastime! Through literature and folktale, we will learn the exquisite art of paper folding. Using a single (or several sheets) of decorative paper there are infinite creative possibilities and you will be amazed at the results of folding and manipulation! Part sculpture, part paper folding and all rigorous engineering.

48) PICKLEBALL

This fast-growing sport combines the elements of badminton, tennis and ping pong. Played on a court with paddles and wiffle balls, pickleball is simpler than tennis and fun to play with your friends.

49) PINBALL WIZARD

Construct your own PinBox Pinball machine with two interchangeable playboards that you will design. For makers, creative thinkers and game designers, the PinBox 3000 is a tabletop cardboard pinball kit that artfully integrates mechanical engineering, physics, sculpture, product design and performance! Light up your play board and be ready to “Tilt the Future!”

- **Pinball Kit Fee: \$50**

50) PIXICADE GAME MAKER

Have you ever wanted to create your own video game? Do you like to doodle or draw? In this class you will learn how to make your very own video games using Pixicade! All you need to do is draw, then watch your doodles magically come to life as playable games. Campers will learn to use the exciting new Pixicade App and all of its editing and Power-Up features! This exciting class will teach campers game mechanics and concepts through STEAM and literacy exploration and mini drawing lessons. At the end of the session campers will have a collection of games they created from the stories, characters, goals, worlds, hazards and game challenges developed in class.

- **Pixicade Kit Fee: \$30**

51) POKEMON TCG

Pokemon TCG is an exciting and longtime favorite card game of strategy and skill where campers collect, train, and battle the cute Pokemon characters that inhabit their world. Beginning and experienced players will take on the role of a Pokemon Trainer and play another Trainer to knock each other's Pokemon out of the battle! Your camp Pokemon deck will be supplied and booster packs await the masters!

- **Pokemon Fee: \$25**

52) PUPPETRY WORKSHOP

In this class we will make several different types of puppets including shadow, hand, finger puppets, and simple marionettes, using a variety of materials including fabric, paper, polymer clay, and paper mache. We will also build and decorate a theater, and at the end of the session our puppeteers will rehearse and perform in a show as part of the Challenge Camp theater production.

53) RASPBERRY PI

Raspberry Pi is the world's smallest, least expensive and most powerful computer for its size. Raspberry Pi was developed by a British company with the purpose of teaching children how to really use a computer, from inline Linux shell commands to basic programming with scripting languages. The Pi is capable of doing many things a full size computer can do such as playing simple games or web browsing. There is an endless supply of projects that can be completed with the Pi. Each camper will take home a basic Raspberry Pi starter kit and a project guide for future experimentation.

- **Raspberry Pi Kit Fee: \$75**

54) ROCKET UNIVERSITY

Students will train to be real "rocket scientists" and "aerospace engineers" in this inspired offering. In "Rocket University" you will learn about the history of rockets from ancient Chinese fireworks, to modern day spacecraft and military applications while discovering principals of launching, trajectories, thrust, navigation, flight paths, altitudes, orbits, recovery methods, safety and more! Students will receive their individual rocket kits and assemble them while applying what they have learned to their design and construction. You will launch your rockets and record data.

- **Rocketry Fee: \$100**

55) SOCCER

Soccer is the most popular team sport in the world. Learn the strategies for playing offense and defense and improve your dribbling, passing and shooting skills in this fast paced, action-packed class.

56) STAGE DOOR

Enter the world of theatrical production! Learn the art of costume and set design. Under the guidance of our artistic director, we will research, measure, design and create original costumes for the musical theatre productions of "The Spongebob Musical" and "Sleeping Beauty and Magnificent Maleficent". Costumes / scenery will be constructed of fabric, paper, foam board, paint and other materials. This imaginative behind the scenes process will bring our production to life and provide an awareness of the importance of stagecraft and design skills to the production. Participants from the theatrical cast are encouraged to join and other non-performers are all welcome!

57) STOP MOTION LABORATORY

Whether you love drawing, painting and sculpture or whether you would like to write stories or act out dramatic scenes, you will have fun exploring the possibilities of animation. Spend a little time learning the basics of handling the camera setup and stop-motion app, then let your imagination take off as you bring your drawings to life, or create your own 3-D characters with modeling clay. You can also use small toys, or even animate real people in your films. Students will receive a digital copy of their films.

58) SURVIVOR 2.0

Orienteering, wilderness survival and emergency preparedness is about more than just lighting a fire and pitching a tent. Survivor 2.0 has been reimagined to inspire both new and returning campers. Campers can build a water filter from found objects, use emergency signaling methods, build shelter, find food, make emergency fires more than 5 different ways...even with a cell phone. First aid simulations, scavenger hunts, and geocaching challenges will teach campers valuable life skills. Our session will end with a “wild marshmallow” hunt, s’mores, stories and songs.

59) SWIMMING

Learn to swim and have a splashing good time in the wonderful indoor pool this summer. Swim instruction and free swim time will be held on campus each day in the Iona athletic center! Campers must provide a swim suit, towel, goggles and Ziploc bag for wet items.

60) TAE KWON DO

Literally “the art of kicking and punching”, Tae kwon do is a martial art that has developed over the course of thousands of years with the earliest records of its practice dating back to 50 B.C. from Korea. It is a highly disciplined art of self-defense, physical prowess, and moral discipline. It is distinguished from other martial arts by its varied and unique powerful kicks.

61) A TASTE OF FRANCE

Visual, audio and tactile stimuli are all intertwined to build literacy skills in French language. Discover the food, the castles and the fictional heroes Le Petit Prince, Petit Ours Brun and Astérix and Obélix. We will play the iconic Mille Bornes game and we will sing to Edith Piaf and Maurice Chevalier and dance to Indila and Django. This multimedia class will delight the five senses with a taste of France.

62) TOY INVENTORS WORKSHOP

Through imagination and creativity, students will build and create their own toys using the concepts of simple machines. Concepts of design and engineering will be incorporated to infuse learning into this fun class. Catapults, dart boards, dinosaurs, castles, ring toss, and bridges are just a few of the things students will create. The culminating project will be an original toy/project/invention of your child’s own idea.

- **Inventor Fee: \$40**

63) THIS LAND IS YOUR LAND

Discover the beauty of Folk and Native Heritage music by learning songs that explore these meaningful times. Have fun singing and learning the historical nature and cultures that inspired songs like Yankee Doodle, I've Been Working on the Railroad, This Land is Your Land, Oh Susannah and more!

64) TURBO TRUCKS

How would you like to race a remote-control truck on the Challenge Speedway? In this class you will have the chance to race a fully ready Traxxas Rustler known for fun and durability and with more power, smoother control, better grip, and performance that makes it one of the fastest electric trucks available. Race around outdoor courses that you design with cones, ramps and more. Campers will take home their car/equipment in this action-packed driving and racing class. With Traxxas' exclusive waterproof electronics, your Rustler can blast through dirt, puddles, mud and even snow, your R/C adventures are limited only by your imagination. See your car at

<https://traxxas.com/products/models/electric/37054-1rustler>

- **Truck Fee: \$200**

65) ULTIMATE FRISBEE

Ultimate Frisbee is an exciting, non-contact team sport that is played throughout the world and whose popularity continues to rise. Ultimate is a unique mixture of Frisbee, football and soccer, providing an exhilarating workout. The spirit of the game stresses sportsmanship and fair play.

66) UNITY GAME MAKER

Calling all aspiring video game developers! Using the Unity game engine, students will create a 2.5D platformer using various 2D, 3D, & Sound assets. The main goal of this course is to have students design a game that's appealing and fun but also gives them a solid foundation in programming. Students will be able to create their own C# scripts that control behavior of the objects on screen as well as modify pre-written code provided by the instructor. Whether you have experience in coding or not, all that is required is a little bit of creativity and a passion for video games.

67) THE VERY HUNGRY CATERPILLAR

Eric Carle's many books represent warmth, security, playfulness and a positive message. Make your own hungry caterpillar, brown bear and grouchy ladybug and more using foam shapes, paper mache, paper, paint, glitter, eyes and antennae. Using Carle's books such as "The Very Hungry Caterpillar" and "Brown Bear, Brown Bear, What Do You See?" as inspiration, this creative art class will focus on his characters and themes of animals and nature.

68) VIVE LA FRANCE!

Hop aboard the TVG and travel to Paris and the provinces of France. Discover the French countryside and Versailles. Traverse the Loire River, villages, food, and music. Students will pack their suitcase and travel with a real boarding pass and train tickets from the SNCF. This is a very interactive program including role-plays to allow students to learn the basics of the French language. Allons-y!

69) WIX WEB DESIGN

Creating interesting, dynamic Websites begins with knowing how to use the tools of Web design. We will be mastering Wix, an online software tool that will allow campers to create professional looking content. Through exploration of design concepts such as layout, contrast, readability, and interactive elements we will develop an understanding of what makes a great user experience. Campers will create websites on a variety of topics including movie reviews, game history, favorite musical genre, "how to..." and more. We will develop documentation skills through digital photography, explore proper digital citizenry and etiquette, and create interactive Web sites that will showcase campers' interests.

70) YOGA

Learn to relax and let go of control by experiencing the power and concentration found in yoga exercises. While stretching is certainly involved, yoga is really about creating balance in body through developing both strength and flexibility. This is done through the performance of poses or postures, each of which has specific physical benefits. Proper exercise clothing required: loose pants, T-shirt and yoga mat.