2021 – Challenge Camp Classes by Cohort

This is our Challenge Camp class schedule for Session 1 by Cohort. 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 2020** for class selection.

3) In a typical Challenge Camp summer, there are over 100 STEM & Arts Enrichment Options for you to customize a schedule based on your child's interests. **We are adopting a Cohort Model for Summer 2021.** Our goal is to maintain the feel of Challenge Camp by offering electives within the cohorts for each period throughout the day. **We are planning for there to be 3-4 class selections during each period pending guidance on cohort size from the State and County Health Departments.**

4) Certain courses may have a materials fee listed. These are typically for class kits or projects.

5) To avoid sharing of technology on campus, we are planning on renting devices that can be assigned to your camper (laptops and/or tablets). We do not want campers bringing personal devices from home onto campus. **If your camper is taking a class requiring technology, a Technology Fee will be added to your invoice.**

6) If you need assistance or have any questions, please email info@challengecamps.com or call the camp office 914-779-6024.

Explorers – campers that are currently in Kindergarten or 1st Grade the 2020-21 school year

4) The Artist's Palette   Session 1   9:00
Instructor: Lida Zimmerman   Grades K-1

An art palette is full of life! Red roars, blue whispers, and yellow yells about the possibilities and appreciation of color you can achieve. You will be creating 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 like Picasso, Pollack, Van Gogh and Monet, and 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!

20) LEGO Tech Junior   Session 1   9:00 or 10:30
Instructor: STEM Staff   Grades K-1

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

27) Science Magic   Session 1   9:00
Instructor: Michael Donovan   Grades K-1

Get ready for a magical experience as we learn the science behind phenomenal experiments! We will explore scientific principles as we go inside a giant soap bubble, create glowing slime, make eggs bounce, make glasses out of Jello, create underwater fireworks, write secret codes in invisible ink, change pennies into silver and gold and more. Young scientists will learn skills for problem solving, creative thinking, decision making, hypothesizing and drawing conclusions.

26) Pixicade Game Maker   Session 1   10:30
Instructor: Jen Roche   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 and then watch your doodles magically come to life as playable games. Campers will learn and use the exciting new Pixicade App and all of it's 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

30) Watercolor Wonders   **Session 1   10:30**
Instructor: Lida Zimmerman   **Grades K-1**

A famous watercolor painter said "There is an extraordinary quality in the reflection of transparent watercolor against the white of the paper that is uniquely brilliant and appealing." Learn the beautiful and whimsical art of watercolor painting techniques and create original works of flowers, water, forms, skies and magical sunsets.

Pioneers – campers that are currently in 2nd or 3rd Grade the 2020-21 school year

4) The Artist's Palette   Session 1   9:00
Instructor: Lida Zimmerman   Grades 2-3

An art palette is full of life! Red roars, blue whispers, and yellow yells about the possibilities and appreciation of color you can achieve. You will be creating 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 like Picasso, Pollack, Van Gogh and Monet, and 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!

19) LEGO Tech   Session 1   9:00 or 10:30
Instructor: STEM Staff   Grades 2-3

Do you want to know 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

26) Pixicade Game Maker   Session 1   9:00 or 10:30
Instructor: Jen Roche   Grades 2-3

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 and then watch your doodles magically come to life as playable games. Campers will learn and use the exciting new Pixicade App and all of it's 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

17) The Illusionist   Session 1   10:30
Instructor: Joseph Fields   Grades 2-3
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

27) Science Magic   **Session 1   10:30**
Instructor: Michael Donovan   **Grades 2-3**

Get ready for a magical experience as we learn the science behind phenomenal experiments! We will explore scientific principles as we go inside a giant soap bubble, create glowing slime, make eggs bounce, make glasses out of Jello, create underwater fireworks, write secret codes in invisible ink, change pennies into silver and gold and more. Young scientists will learn skills for problem solving, creative thinking, decision making, hypothesizing and drawing conclusions.

Innovators – campers that are currently in 4th or 5th Grade the 2020-21 school year

3) APP Developer   **Session 1   9:00**
Instructor: Sid Jain   **Grades 4-5**

We have all heard "there's an APP for that"... Great apps start with a tangible idea that can grow into something ground-breaking, clever or useful. We will explore exactly how apps work, what features they include as our programmers use the Shopify platform to develop their product. Our app expert will discuss factors that should be integrated into your business model: What do people want or need in an app? How do I make sure it works well? Are there competitors in the marketplace? And most importantly how do I launch my app? This is a modern business focused class for motivated campers.
App Fee: $150

2) Adventures in the Lab   **Session 1   9:00**
Instructor: Danielle Spano   **Grades 4-5**

Do you know what it takes to be a good scientist? Join us for an adventure into the scientific world where we will perform hands-on chemistry 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, experiment with polymers by making bouncing balls, the principles of buoyancy using common household materials, and attempt to fool our friends with some science magic! See the world with amazement and wonder as we embark on our lab adventures!

7) Challenge Makerspace   **Session 1   9:00**
Instructor: Michael Nathenson   **Grades 4-5**

Are you eager to create and experiment in engineering? A makerspace provides a hands-on, creative way to encourage students to design, experiment, build and invent as they engage in science, engineering and tinkering. In this project based STEM class campers will work in a collaborative setting and build invaluable problem solving skills. Examples of the fun engineering based projects may include building catapults, electric boats, a flashlight, pendulums, pneumatic machines, and a solar car.
Maker Fee: $100

22) Minecraft: Challenge Camp Edition   **Session 1   9:00**
Instructor: Geoffrey Byrne   **Grades 4-5**

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 or 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

25) Photo Finish   **Session 1   9:00**
Instructor: Liz Steger-Hartzman   **Grades 4-5**

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.

1) 3D Printing Lab   **Session 1   10:30**
Instructor: Nik Kuryla   **Grades 4-5**

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: $350

9) Code Central: Javascript Animation and Design   **Session 1   10:30**
Instructor: Neil Grand   **Grades 4-5**

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.

13) Drone Flight School   **Session 1   10:30**
Instructor: Grace Cantwell   **Grades 4-5**

Our beginning drone class will explore the various uses of drones. They can be used for delivery, surveillance and security, aerial photography, filmmaking and more. We will discuss safe and responsible drone operation and local laws that apply. Campers will then fly their pre-assembled drones using Line of Sight (LOS) techniques. With practice, our new drone pilots will fly through obstacles and learn advanced flying techniques. Each camper will take home their own fully-functional drone.
Drone Fee: $300

14) Escape Room   **Session 1   10:30**
Instructor: Hudson Apotheker   **Grades 4-5**

Trapped in a room with a group of friends and 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!

Trailblazers – campers that are currently in 6th Grade and up the 2020-21 school year

1) 3D Printing Lab **Session 1   9:00**
Instructor: Nik Kuryla **Grades 6+**

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: $350

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Instructor: Neil Grand **Grades 6+**

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11) Digital Film Academy **Session 1   9:00**
Instructor: Tony Ely **Grades 6+**

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

13) Drone Flight School **Session 1   10:30**
Instructor: Grace Cantwell **Grades 6+**

Our beginning drone class will explore the various uses of drones. They can be used for delivery, surveillance and security, aerial photography, filmmaking and more. We will discuss safe and resp-onsible drone operation and local laws that apply. Campers will then fly their pre-assembled drones using Line of Sight (LOS) techniques. With practice, our new drone pilots will fly through obstacles and learn advanced flying techniques. Each camper will take home their own fully-functional drone.
Drone Fee: $300

14) Escape Room   Session 1   9:00
Instructor: Hudson Apotheker   Grades 6+

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3) APP Developer   Session 1   10:30
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We have all heard "there's an APP for that"... Great apps start with a tangible idea that can grow into something ground-breaking, clever or useful. We will explore exactly how apps work, what features they include as our programmers use the Shopify platform to develop their product. Our app expert will discuss factors that should be integrated into your business model: What do people want or need in an app? How do I make sure it works well? Are there competitors in the marketplace? And most importantly how do I launch my app? Campers will have the option to launch on Android, IOS or both platforms. This is a modern business focused class for motivated campers.
App Fee: $150

5) Black and White Drawing   Session 1   10:30
Instructor: Ana Saura   Grades 6+

You have to think out of the box in this class to create extraordinary artwork with the absence of color. Using pencils, Sharpies and paper, you will learn how to draw graphic designs of animals, trees and faces. You will be amazed at the movement and dimension in your drawings using only simple lines, contrast and shadows!

7) Challenge Makerspace   **Session 1   10:30**
Instructor: Michael Nathenson   **Grades 6+**

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Maker Fee: $100

16) Fun with Photoshop   **Session 1   10:30**
Instructor: Liz Steger-Hartzman   **Grades 6+**

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

24) PC Builders Academy   **Session 1   10:30**
Instructor: Geoffrey Byrne   **Grades 6+**

Ever wonder what it takes to actually assemble a personal computer? In this course we will learn about each component by understanding how to tear down and rebuild a used PC, then we will build our own from soup to nuts! Starting with a bare case, to the motherboard, to the operating system and software involved, you will fully assemble, operate, tweak, and in the end use your new blazing fast PC! This PC can replace that aging desktop at home.
Computer Fee: $700