**Summer Enrichment Camp Courses 2022**

**High School**

**An Exploration of Photography**

This class will explore a variety of photographic techniques ranging from alternative process photography, to the current use of digital techniques, and also basic photo editing. Students will have an opportunity to develop photographic works in multiple mediums as well as gain an understanding for the photographic process.

**Bet On It**

Throughout history, cultures have used different types of dice to make decisions and play games. When should you roll again? Should you call the bluff? Cut your losses while you can? We will explore dice games and activities, while we learn the math associated with them.

**Engineering and Teamwork**

Discover the engineering process and foster your teamwork skills through hands-on activities. Students will work with new partners each day to create cargo containers, a mountainous road, a payload mover, and bore through Mount MSMS.

**The Face of STEM**

What does a STEM (Science, Technology, Engineering, and Mathematics) professional look like? Not the stereotype! From math to physics to biology to chemistry, we will consider the life and work of famous **women** in STEM as we do what they did: play with rockets, explore DNA, and seek to unravel some of life’s amazing mysteries.

**Fractal Frenzy**

The participants will enjoy exploring and making various fractal structures in nature and how to identify them. They will construct geometrical and random fractal structures via artwork and computer codes. We will explore number patterns that emerge from Sierpinski's triangle, the Jurassic Park fractal, the Koch snowflake and others. We will also explore number chaos theory and how it applies to fractals.

**Going Global**

Explore the concept of “normal” from a global statistics perspective. We will explore statistics and challenge viewpoints as we grapple with the issues of global poverty and education as we play simulation games, watch video clips, and hold class debates. This is not a math course, but we will use math and simulation to explore the world around us.

**Junkyard Wars**

Use simple, (mostly) recycled or reused materials to meet design challenges from simple bridges to cardboard and newspaper stools. You will work in teams to solve each challenge.

**Krypto Kraze**

Have you ever wondered how to create a secret code for a message so it is easy to decode but difficult to crack? This course will familiarize students with commonly used cryptography terms, guide students through encoding and decoding messages as well as introduce various encryption techniques such as Caesar cipher and public key encryption. Students will use mathematics with matrices to decode messages. Students will also be able to develop their own secret codes and have their fellow classmates try to crack the codes using mathematics. This course will also discuss the history of coding in various themes. By the end of this course, students will gain better reasoning and problem solving abilities. Students will be able to reason and use logic at higher levels and gain a greater conceptual understanding of mathematics.

**Magic in Chemistry in Harry Potter’s World**

In this course, students will enter the world magic (via the Hogwarts School) to uncover chemical concepts and principles while exploring and understanding the “magic” of science. Students will participate in inquiry-based activities for hands-on discovery of basic principles of chemistry and the relevance of these principles to daily life in the world of Muggles.

**Mystery of Forensic Science**

Have you ever wondered how evidence is collected to help bring criminals to justice? Does learning about different techniques and skills used by forensic scientists and crime scene investigators sound interesting to you?  Join us as we perform ink chromatography, gel electrophoresis and forensic entomology to solve a few cases of our own!

**No Experience Needed Coding**

Looking for all students who are interested in computer programming or playing with Robots but have little to no experience. Learn how to program the Sphero Robot and challenge yourself to guide the Sphero through 5 challenging courses/obstacles.

**Positively Medieval: The Return**

Back by popular demand is the original Positively Medieval class which allows students to make paper from rags, dye wool with natural dyes, and live through a siege by making catapults and crossbows!  As an added attraction, students will also be grinding pigments to make paints and learning about medieval rope making.

**Robotics**

Robotics is the fusion of Computer Science and Engineering, and in our camp, we will give students the opportunity to experience both. The Robotics course will teach students the basics of computer programming logic while letting them build their own interactive fields and games.

**Stop-Motion Storytelling**

Get creative! Stop-motion animation combines creative writing, technology, art, and music to tell stories one frame at a time. In this class, you will learn how to create stop-motion animation with 2D and 3D images. Not of a fan of drawing? Not a problem! From paper cutting to play-dough modeling, you will work in teams to meet the objective of the day.