POPE FRANCIS PREPARATORY SCHOOL

SUMMER S.T.E.A.M. EXPERIENCE 2021

TECHNOLOGY · ENGINEERING · ARTS · MATHEMATICS · SCIENCE

STEAM FOCUSED PROGRAM | 4 WEEKS | FULL DAY & HALF DAY OPTIONS | Grades 6-9

Pope Francis Prep is prepared to have in-person learning this summer following all safety and health guidelines. Our Summer STEAM program is fun, challenging, and designed for students entering grades 6-9. Morning and afternoon sessions will allow students to experience exciting and creative endeavors while being introduced to a variety of STEAM (Science, Technology, Engineering, Arts, and Mathematics) focused sessions, plus - additional sessions in fitness, strategic games, study skills, and more! We invite you to take advantage of the many opportunities available at our beautiful, state-of-the-art campus. Sessions are instructed by PFPS faculty as well as faculty from local area schools.

Week 1 — June 21-25, 2021

8:45-11:20am (choose 1 session)	• 3D Design & 3D Printing • Fieldwork in Ecology • Performing Arts • Picture Magic • Rhythm & Drumming • Read It, Write It, Draw It • The Mad Scientist
12:30-3:15pm (choose 1 session)	• Adventures in Mindcraft Game Design • Adventures in Robotics & Programming • Rhythm & Drumming • Vroom, Vroom, Let's Go!

WEEK 2 — July 19-23, 2021

8:45-11:20am (choose 1 session)	• 3, 2, 1 Blast Off • Develop Your Inner Van Gogh • Fieldwork in Ecology • Picture Magic • Rhythm & Drumming • Study Skills
12:30-3:15pm (choose 1 session)	• Adventures in Mindcraft Game Design • Green Thumb • The Mad Scientist • You can make IT

WEEK 3 — July 26-30, 2021

8:45-11:20am (choose 1 session)	• Creating Creatures • Picture Magic • Pound Fitness • Programmimg using Scratch 3.0 • Rhythm & Drumming
12:30-3:15pm (choose 1 session)	• Adventures in Mindcraft Game Design • Adventures in Robotics & Programming • Chess Time! • Paper Engineering

WEEK 4 — August 2-6, 2021

8:45-11:20am (choose 1 session)	• Algebra Bootcamp • Paper Engineering • Picture Magic • Pound Fitness • Study Skills • Talk to the Hand
12:30-3:15pm (choose 1 session)	• Adventures in Mindcraft Game Design • Imagine the Possibilities • Programmimg using Scratch 3.0 • Strategy Games

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99 WENDOVER ROAD SPRINGFIELD, MA 01106

Learn more by visiting: www.popefrancisprep.org/summer-program

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SUMMER STEAM EXPERIENCE 2021

SESSION DESCRIPTIONS

3D Design and 3D Printing The technology of 3D printing is exploding across numerous industries from 3D-printed homes to healthcare devices and components used in space crafts! Participants will be introduced to the exciting world of 3D printing. Students will learn how to 3D model with Tinkercad or Autodesk Fusion 360, feel comfortable going through the 3D printing process with Flashforge Finder 3D printer and slicing application and learn how to think like a product designer. By the end of the course students will develop skills in Design Thinking and invent a product that solves real-life problems.

3,2,1 Blast Off Participants will be engaged by constructing rockets and then blasting them off at the end of the week while learning the Engineering Design process!

Adventures in Minecraft Game Design This program will empower students to become creators within the digital world of Minecraft rather than just consumers! Students will learn to use teamwork and problem solving while building their own custom code, environments and mini games within the familiar framework of Minecraft.

Adventures in Robotics & Programming The future is here and robots have entered the workforce! Those who can program them will have a very fruitful and fulfilled life, realizing their life's dreams. Learn to program a few robots to perform amazing challenges. We will explore the Amazon Hercules robot in a distribution and warehouse environment, and the Evo robot that can be coded completely screen free and using a 5 level Blockly programming language. Let your imagination guide you as you create games, tell a story, make music, or combine science & math to experience a STEAM challenge.

Algebra Bootcamp A Workout for Your Brain! If your child feels that they do not like Algebra and think they are not very good at it, then this program is for them! During the week-long immersive program, students will strenghten their foundation for high school mathematics and preview the material for the upcoming school year, providing a head start in first year algebra. This program will cover the major components of algebra and is taught in a fun and interactive way!

Creating Creatures If you love animals and all things mythical and magical, this session is for you! After dreaming up and planning the features to your own mythical creature, you'll bring it to life by painting air dry clay. Will your creature live in the ocean, the forest, desert, or the tundra? Building habitats and adding details, we'll focus on where your mythical creature lives, what they eat, where they sleep, and more. Bring your imagination and love of magical creatures!

Chess Time! Chess is the classic game of strategy. If you know how to move the pieces but aren't sure what the best strategies are, this camp is for you! We'll learn some basic openings, endgame patterns, and how to find your opponent's weak point to attack. Plus, you'll get to befriend other chess players along the way.

Develop Your Inner Van Gogh Everyone has an inner artist they can call upon to express their creativity. This fun session is perfect to learn painting techniques using the versatile medium of acrylic paint. Students will start out by practicing thin strokes to give a watercolor effect to thicker strokes giving an oil color effect. Participants will learn the basics of acrylic painting and its tools while working on canvas to practice acrylic painting techniques, color mixing, composition, and more, all in a fun and supportive environment. The week will culminate in an independent study painting of each student's choice.

Fieldwork in Ecology Using our campus on Wendover Road, this program will introduce students to field work in both terrestrial (land) and aquatic (water) habitats. Students will learn how to map an area, determine slope of the land and work with Google Maps to gather data about the school's property. Students will also examine different properties of soil, on the larger physical scale as well as with microscopes. The studies will then be expanded to the pond; analyzing the water and sampling for microscopic life, again using microscopes. The students will be responsible for keeping a Nature Journal of their studies.

Green Thumb Participants explore the world of growing plants, garden art, investigating a vernal pool and planting, tending, harvesting, and tasting fruits and vegetables in the PFPS Garden. Each day will include hands-on work time and playtime in the garden and pond, games and ways to creatively connect to nature all while learning about food sustainability.

Imagine the Possibilities (Inventing with Physical Computing Devices) Invention Education helps students identify and create new possibilities for themselves and their world. It builds confidence by creating a new sense of their identity, their abilities, and their future. Participants will experiment with our Makey-Makey & Micro:bit controller boards to invent their new creations!
For the Makey-Makey we will craft a simple circuit and learn what it means to be a conductive material as well as make a playable drawing. Then we will craft a city by choosing to draw, build, or construct a city in a shoebox. Participants will imagine the buildings and the stories of the people who live in their crafted city. Then they will code a story about their city using Scratch 3.0.
With the Micro:bit participants will code simple projects like a flashing emotion, send a smile, sunlight sensor, or a light alarm using MakeCode, then choose a project that aligns with the UN's 17 Sustainable Development Goals by programming the Micro:Bit using MakeCode, Scratch, or for the advanced participants, they can use Python. Example projects are inventing a trackable device for a wild animal, prototype safer fishing nets, or make your own step counter.

Paper Engineering Participants will combine simple electronics (LEDs and motors) with the centuries-old Japanese papercraft art of Origami to make a variety of 3D designs. Participants will explore art, design, engineering, and basic electronics to make projects that move, light up, and blink!

Performing Arts The theater department at Pope Francis Prep is excited to educate and support the next generation of excellence in young performers by offering a Theater session! This session will focus on basic theater training and students will learn basic acting skills, set design, costumes, lighting, sound design and prop design. Students will gain a greater appreciation of live theater and the arts in general by promoting valuable life lessons such as confidence, collaboration, and communication skills.

Picture Magic! Participants will explore photography in terms of light, composition, rule of thirds, and selecting a natural background as they learn the fundamentals of multimedia storytelling and editing in a hands-on creative environment. Photography and photo editing encourages experimentation, risk taking, and collaboration. Participants can use their own cameras to take their photos or use royalty free media to experiment with editing photos by applying effects, filters, add text, crop or resize pictures.

Pound Fitness Created by two female drummers, the POUND workout fuses cardio interval training with drumming to provide a challenging, heart-pumping workout. Great music, great stress relief!

Programming using Scratch 3.0 Participants will make their imagination come to life by learning to code with Scratch 3.0. They will explore the Scratch platform as a block-based programming language and as a community of builders and remixers. Students will work on design-driven projects utilizing animation, music and sound, art, interactivity and game design as they build skills and vocabulary in programming using the Scratch language.

Read It, Write it, Draw It! Participants will create a storybook using their own text and illustrations. They will then bind their book. Students will read their book out loud during our showcase as well as take their masterpiece home.

Rhythm and Drumming The beat, the pulse, and the rhythm that moves us and makes us smile is a part of everyone! Participants will play music on drums and various rhythm instruments together, make up beats and record them to share with their families, and engage in various games and movement activities, all helping them feel the beat, develop musical skills, connect with others, and have a fun time doing it. Making music is something you can enjoy for life! Can't wait to see you in Rhythm and Drumming!

Strategy Games Everyone knows about Checkers and Chess, but do you know other traditional strategy games, like Gomoku, Mancala, or Hnefatafl? This session is an opportunity to play some of the world's oldest games and befriend like-minded strategic thinkers. Let the games begin!

Study Skills The course will focus on helping students gain tools and knowledge to increase their academic success. Students will discover their learning styles; improve note taking, organizational skills and various study hints. Students will leave with concrete ways to achieve their academic goals.

Talk to the Hand Your imaginative character will come to life by making shadow and stick puppets. Learn the art of character design while practicing the art techniques that will allow your character to come to life. Students will showcase their puppets by putting on a puppet performance.

The Mad Scientist We have chosen our favorite chemistry activities for this session! Participants will learn the importance of taking accurate measurements when creating our exciting concoctions and will use the scientific method while conducting their experiments. Concoctions include slime, oobleck and talk about non-Newtonian fluids, and mix colorful and fragrant potions with liquid watercolors. Participants will also make a volcano as a timeless classic experiment. Participants will go home with a high quality sampling of what they make for continuous home enjoyment.

Vroom, Vroom, Let's Go! Participants will be engaged in a variety of engineering design & build projects for a variety of cars, then racing them! Participants will use the Engineering Design process to experiment with a variety of materials to evaluate each design of their car. They will change 1 variable at a time to record the effects on their design.

You Can Make It! (Digital Fabrication Using Paper & Vinyl) Participants will be experiencing digital fabrication maker tools that will unleash their creativity using vinyl and paper as their mediums. Using 2D design, participants can experience many projects including an original sonnet greeting card that lights up, festive flashlights, iron-on designs for a T-shirt or tote bag, design stickers for a water bottle, a cell phone case, and a bookmark.

REGISTER AT
WWW.POPEFRANCISPREP.ORG/SUMMER-PROGRAM
registration is open until June 4, 2021 or until session is full

Tuition
$200 per week for full day (2 sessions per day)
$165 per week for half day (1 session per day)

Program Hours
Full Day - 8:30am-3:15pm
Half Day - 8:30am-11:20am or 12:30pm-3:15pm
Morning Care available from 7:30am-8:30am for an additional fee ($10 per day)

For more information visit our website or contact our Summer Director, Laura Coulombe at 833-999-7673 ext. 3201 or lcoulombe@popefrancisprep.org