Virtual Offerings Overview

STEM Center USA is excited to offer a variety of courses online. As the world transitions to and continues with virtual learning, STEM Center USA is uniquely prepared to provide hands-on, engaging learning experiences for students. STEM Center USA has offered K-12 programs for over 10 years. Virtual programs launched early in 2020 with positive reception and we are grateful to continue (and expand!) these programs. We have transitioned over 15 courses to a virtual format that has been tested and vetted by several hundred students just this past summer. Our instructors are trained to engage students in an exciting, interactive way while also communicating key learning topics and providing live demos of building and coding. Please find logistics on virtual courses, schedule, Q&A, and more in the following pages! Hope you see you (virtually!) soon!

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Registration Bundles & Class Length

The recommended class lengths are based on our experience teaching virtual classes and camps. Students can participate in our virtual programs 1x, 2x, or 3x per week. While students move through courses at their pace, we work to match session bundle with courses as possible. We work hard to create and constantly strive to improve our quality custom programs.

Family can choose from three tiers of bundled sessions. Sessions do not expire.

For Private 1:1 Sessions

- K – 3rd Grade: 60 minute timeslot
  - Bundle 1 – 8 Sessions: $320 ($40/session)
  - Bundle 2 – 12 Sessions: $460 ($38/session)
  - Bundle 3 – 16 Sessions: $575 ($36/session)
- 3rd – 12th Grade: 75 minute timeslot
  - Bundle 1 – 8 Sessions: $360 ($45/session)
  - Bundle 2 – 12 Sessions: $515 ($43/session)
  - Bundle 3 – 16 Sessions: $640 ($40/session)

For Private Group Sessions (2- 4 students)

- K – 3rd Grade: 60 minute timeslot
  - Bundle 1 – 8 Sessions: $280 ($40/session)
  - Bundle 2 – 12 Sessions: $360 ($38/session)
  - Bundle 3 – 16 Sessions: $440 ($36/session)
- 3rd – 12th Grade: 75 minute timeslot
  - Bundle 1 – 8 Sessions: $320 ($45/session)
  - Bundle 2 – 12 Sessions: $450 ($43/session)
  - Bundle 3 – 16 Sessions: $560 ($40/session)

Virtual Class Recommended Hours

Depending on the time and course, your child's instructor may vary. We will confirm the best instructor possible for your child's personality, experience, and interests. Below are hours we suggest for interested families – this is based off of times we know our team is available virtually.

- Mondays, 10:00 AM – 12:00 PM and 4:00 PM – 6:00 PM
- Tuesdays, 4:00 PM – 6:00 PM
- Wednesdays, 10:00 AM – 12:00 PM and 4:00 PM – 7:00 PM
- Thursdays, 4:00 PM – 6:00 PM
- Fridays, 10:00 AM – 12:00 PM and 3:00 PM – 6:00 PM
- Saturdays, 3:00 PM – 5:00 PM

Semester Schedule

Classes will be reserved for the entire semester of September 21st – December 19th for a total of 12 weeks. Students can take sessions up to three times per week. For most students, we recommend 1-2 times per week as the ideal amount.

We understand changes may come up in the next couple of months, but we are committed to virtual sessions for the entire 2020 – 2021 academic year. For any family vacations/trips, we will simply skip the week and add the missed session on to the end of your program. This “bumps back” all your sessions accordingly. Please provide at least a 24 hour’s heads up of any expected absence.

Virtual Course Catalog

Early/Junior STEM

Students must be accompanied by a parent during their first 1-2 sessions to help with Zoom technology and building. Sessions are 45 minutes in length.

Construction & Simple Machines

Description: Our youngest STEMers will build and design a model during each session with the assistance of an instructor and their parent. Students will work on hand-eye coordination, building, and experimenting. Students will be exposed to engineering terminology as they carry out certain activities.
Estimated # of Sessions: ~8-10 sessions
Platforms Used: Lego Duplo – borrowed from the center
Technology Required: Laptop or iPad for Zoom
Recommended Age Group: Incoming K- 1st Grade. It is highly recommended this class be taken with assistance from a parent or older sibling.

Intro to Robotics

Description: It's time to bring designs to life… that means programming! Jr. STEMers will code their creations using an easy-to-comprehend graphical programming interface that lays the foundation of programming logic. Students will also build their themed robots and program using sensors.
Estimated # of Sessions: ~12 – 18 sessions
Platforms Used: Lego WeDo 2.0 – borrowed from the center
Technology Required: iPad for programming. Laptop/second screen for Zoom recommended.
Recommended Age Group: Incoming K – 3rd Grade

Coding with Dash

Description: Start coding with the friendly robot Dash! This robot will introduce students to lights, sounds, movements, and even variables. Bring your robot to life using proximity sensors, button sensors, and LEDs. In addition to coding, students will have creative design projects where they use craft materials and Legos from home.
Estimated # of Sessions: ~ 6 – 10 sessions
Platforms Used: Dash Robot– borrowed from the center
Technology Required: iPad for programming. Laptop/second screen for Zoom recommended.
Recommended Age Group: Incoming 1st – 3rd Grade

Coding with Ozobot

Description: Ozobot is a fun and friendly robot that introduces an innovative way to entertain and learn! Using markers and paper, Ozobot recognizes color codes and performs specific commands.

Students will learn basic coding concepts in this camp. This course is designed for current 1st – 3rd graders with some coding experience.

Estimated # of Sessions: ~ 4 - 6 sessions

Platforms Used: Ozobot – borrowed from the center

Technology Required: iPad for programming. Laptop/second screen for Zoom recommended.

Recommended Age Group: Incoming 1st – 3rd Grade

Create Your Own Virtual Reality – Junior I

Description: Our newest class! Students will learn how to create their own virtual worlds using the CoSpaces app. Students will choose their own environments and learn to animate their own characters. Once students have completed their project, they will experience it in VR using a google headset (provided as a part of this course). Example themes include animals, family, space, vacations, and more!

Estimated # of Sessions: ~ 8 – 10 sessions

Platforms Used: CoSpaces Edu

Technology Required: iPad for programming. Laptop/second screen for Zoom recommended. A google headset is provided as a material add-on for $15.

Recommended Age Group: Incoming 1st – 3rd Grade

Create Your Own Virtual Reality – Junior II

Description: For families that took our VR classes over summer, this is the next level of the course. Students will dive into more complex codes as they create even more intricate projects. Example projects include a maze game, hide & seek, quiz game, and more. By the end of this course, students will have used coordinate movement, if/else blocks, and even some variables.

Estimated # of Sessions: ~ 8 – 10 sessions

Platforms Used: CoSpaces Edu

Technology Required: iPad for programming. Laptop/second screen for Zoom recommended. A google headset is provided as a material add-on for $15.

Recommended Age Group: Incoming 2nd – 3rd Grade

Discover STEM

The following courses are designed for students in 3rd – 7th grade. Parents should assist students on the first 1-2 sessions as students get comfortable using the Zoom technology.

Discover Robotics with EV3 – Level I

Description: Our core and most popular introductory course. Discover Robotics introduces students to robotics for the first time as they build their own "MyBot", learn how to use a touch sensor, color sensor, and ultrasonic sensor, and program their "MyBot" to do various missions.
Estimated # of Sessions: ~6 – 8 sessions
Platforms Used: Lego Mindstorms EV3 – borrowed from the center
Technology Required: iPad for programming. Laptop/second screen for Zoom recommended.
Recommended Age Group: Incoming 3rd – 6th

Building and Design – Discover Robotics Level II

Description: For our Lego lovers and builders out there! Join us as we build a catapult, launcher, and spinning art robot. Continue your learning as you build unique robots and program them to life.
Estimated # of Sessions: ~6 – 8 sessions
Platforms Used: Lego Mindstorms EV3 – borrowed from the center
Technology Required: iPad for programming. Laptop/second screen for Zoom recommended.
Recommended Age Group: Incoming 3rd – 6th

Create Your Own Virtual Reality – Discover I

Description: Students will learn how to create their own virtual worlds using the CoSpaces app. Students will choose their own environments and learn to animate their own characters. Using a block-based programming software, students will learn about coordinate movement, paths, loops, and variables. Example projects include a dream home, scavenger hunt, maze game, and escape room challenge. Once students have completed their project, they will experience it in VR using a google headset (provided as a part of this course).
Estimated # of Sessions: ~ 10 - 12 sessions
Platforms Used: CoSpaces Edu
Technology Required: Laptop for coding and Zoom. A google headset is provided as a material add-on for $15.
Recommended Age Group: Incoming 3rd – 6th Grade

Create Your Own Virtual Reality – Discover II

Description: This second level will dive deeper into the coding capabilities using the CoSpaces software. Students will create their own Parkour games that include multiple variables and lives. Then, students will be introduced to physics concepts using an engine that simulates velocity and acceleration. This course is ideal for students that have taken a camp/course with VR before.
Estimated # of Sessions: ~ 8 – 10 sessions
Platforms Used: CoSpaces Edu

Technology Required: Laptop for coding and Zoom. A google headset is provided as a material add-on for $15.
Recommended Age Group: Incoming 5th – 9th Grade

Coding & Game Design – Levels I & II

Description: Learn the basics of game design by creating your own games! Students will code in Scratch 3 to design their own web-based games the involve keyboard interactions, gravity, manipulation, and intermediate coding skills. Games include Etch-a-Sketch, Maze Race, Pizza Tosser, 2-Player Game, and DIY stories. This course can be customized for beginners and intermediate level students.
Estimated # of Sessions: ~10 - 12 sessions
Platforms Used: Scratch 3
Technology Required: Laptop for coding and Zoom.
Recommended Age Group: Incoming 3rd – 9th

Design in CAD – Levels I & II

Description: Learn to make your own 3D models using Computer Aided Design (CAD). Students will learn how to sketch, design, and create a range of 3D items. Example projects include bookmarks, keychains, picture frames, pencil holders, and more. Students will get 2 items printed as a part of this course. This course can be customized for beginners and intermediate level students.
Estimated # of Sessions: ~10 - 12 sessions
Platforms Used: TinkerCAD
Technology Required: Laptop for modeling and Zoom.
Recommended Age Group: Incoming 3rd – 9th

Game Design with Minecraft

Description: Love to game? Love Minecraft? Let's take your skills to the next level and how students how to design and make their own games. Learn the basics of game design and build in-demand STEM skills while getting to play in your favorite video game interface. Students will code their own levels and games and build their own environments and adventures.
Estimated # of Sessions: ~8 - 10 sessions
Platforms Used: Minecraft Education
Technology Required: Laptop for software and Zoom.
Recommended Age Group: Incoming 3rd – 9th

Game Design with Roblox

Description: Roblox is the largest social gaming platform that allows students to create and play in immersive 3D worlds. Students will learn to be creators in this course as they use the Lua coding language. Students will learn the basics of programming commands, expand characters/worlds, create custom actions and conditions, and use loops, conditionals, arrays, and much more.
Estimated # of Sessions: ~10 - 12 sessions

Platforms Used: Roblox

Technology Required: Laptop for software and Zoom.

Recommended Age Group: Incoming 4th – 9th

Intermediate/Advanced STEM

The following courses are designed for students in 6th/7th – 12th grade. Sessions are recommended for 60 minutes and up to 90 minutes if possible.

Intro to Electronics

Description: The flow of electricity and a base understanding of current and resistance is essential. Students will learn about basic electronics components including LEDs, resistors, capacitors, buttons/switches, IC chips, and more! They will prototype their circuits using breadboards that are provided in an electronics materials kit for this course.
Estimated # of Sessions: ~6 – 8 sessions
Platforms Used: Electronics Materials Kit
Technology Required: Laptop for Zoom and Course Handbook
Recommended Age Group: Incoming 6th – 12th

CAD with Fusion 360

Description: This course will introduce students to the world of Autodesk Fusion 360, a CAD software that is used by engineering professions to design and test models. Students will learn various designing techniques from basic extrusions to efficient patternss. Students will get their projects 3D printed and our center. Example projects include puzzle cubes, trammels, and more.
Estimated # of Sessions: ~10 – 12 sessions
Platforms Used: Autodesk Fusion 360
Technology Required: Laptop for Zoom and Software
Recommended Age Group: Incoming 6th – 12th

Coding in Java

Description: Learn to code in Java, a popular Object-Oriented Programming (OOP) language. Programs will cover printing lines, user inputs, conditional statements, loops, calculations, and basic user text input games.
Estimated # of Sessions: ~ 8 - 10
Platforms Used: Eclipse
Technology Required: Laptop for Zoom and Software
Recommended Age Group: Incoming 6th – 12th

Game Design with C# Unity

Description: Students will learn to code in C# as they design their own video games. Topics will include the basics of game design development and architecture. Students will combine their 3D modeling skills and physics knowledge with coding skills to create games like “Roll-a-Ball” to “Asteroid Blaster” and customized maze game navigation projects.
Estimated # of Sessions: ~ 10 - 12
Platforms Used: Unity
Technology Required: Laptop for Zoom and Software
Recommended Age Group: Incoming 7th – 12th

Raspberry Pi Robotics

Description: Learn to set up your own Raspberry Pi mobile station with the Pi-Cruiser. This entire robot kit comes as a part of the class. Learn to code in Scratch and Python to make your Pi-Cruiser move, take pictures, navigate a maze and more.
Estimated # of Sessions: ~ 10 - 12 sessions
Platforms Used: Raspberry Pi Kit (+$250 take-home kit)
Technology Required: Laptop for Zoom and Software
Recommended Age Group: Incoming 7th – 12th

Arduino Robotics

Description: Build your own Arduino based robot from scratch. Put together every component, from the nuts and screws to the wiring and sensors. Then, bring your robot to life by coding in Arduino – a C based programming language. This course includes a take-home kit to keep!
Estimated # of Sessions: ~ 10 - 12 sessions
Platforms Used: ArdiBot Robot Kit (+$250 take-home kit)
Technology Required: Laptop for Zoom and Software
Recommended Age Group: Incoming 7th – 12th

Virtual Class Sign-Ups Link

If you are ready to register your child for virtual classes, please use the google form below. This will allow us to see your 1st, 2nd, and 3rd choice time-slots and match you to the ideal instructor. Once you have submitted your form, we will take about 1-2 weeks to finalize our schedule. You will receive an email confirming your lesson day/time, course, and instructor.

https://forms.gle/fKgyN7HvtAFXdYyp8

We will use an online portal to process all payments. For families that have credit with us from previous memberships, we will first apply those funds. For families that do not have credit, an invoice will be sent to you with the payment amount prior to classes begin.

If you have any questions, please let us know. We understand this is a new process for all of us and are more than willing to adjust our schedule if possible. Thank you so much and we look forward to continuing a great learning experience!

FAQs

Q: I have two kids. Can they take the virtual class together?
A: Siblings can take the same class if they are eligible for the course type/challenge level. This is dependent on age and experience.

Q: What happens after I register on the google form?
A: Please give us until Wednesday, September 16th to finalize our virtual schedule. We will email you a confirmation of your reserved time-slot as well as the recommended courses that your child will begin. Virtual classes will begin September 21st onwards.

Q: How many days a week can my child take classes?
A: We recommend virtual sessions 1 – 2 times per week. For example, every Wednesday from 5:00 PM – 6:15 PM. Or, every Tuesday and Thursday from 9:00 AM – 10:15 AM. The maximum we can offer at this time is three times a week.

Q: What if I need to cancel a session? (child sick, on vacation, etc)
A: We will roll over any unused sessions to the end of the program. Essentially, this pushes everything back by one week (or the corresponding number of missed sessions). Please provide a 24-hour's notice minimum of any cancelled class.

Q: I forgot and my child missed a session without prior notice. What happens?
A: We understand that emergencies happen, but we must also cover the cost of our instructors' time. If a session is missed without a 24 hour's notice, we must deduct the cost of the session. In the case of an emergency, call/email/text us. We will be as accommodating as possible!

Q: Instead of doing 1:1, can I sign up with a group of friends?
A: We are scheduling group private lessons. For any groups of 2 – 4 students, we are able to create a private class and bring the cost down per session. Please contact us for more details and fill out the google form.