COMPUTER ADVENTURES

Computer Adventures is dedicated to providing children from Pre-K to Grade 8 access to leading-edge technology education in a safe, fun and confidence building environment. In addition to teaching technical skills, we also teach analytical thinking, encourage collaboration and creativity.

Since 2009, Computer Adventures have been partnering with schools, parents, recreation centers, libraries, various organizations and businesses to provide enrichment classes, camps, events/parties, coaching, consulting and teacher training.

We will accommodate your schedule and provide instructors as well as the equipment needed for our courses either at your physical at your venue or online in a virtual classroom.

LEADING-EDGE TECHNOLOGY TOPICS	ENRICHMENT CLASSES
ROBOTICS	CAMPS
CODING	EVENTS/ PARTIES
GAME DESIGN	COACHING
ANIMATION	CONSULTING
GRAPHICS	TEACHING TRAINING
ELECTRONICS	COURSE CUSTOMIZATION
FIRST LEGO LEAGUE	

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37 Carlton Drive, Mount Kisco, NY 10549
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LEADING-EDGE TECHNOLOGY TOPICS

Augmented Reality (CDAR)**	Grade 4 and up	Course Duration: 8 to 16 hours
Drone Programming (RBDP)	Grade 4 and up	Course Duration: 8 to 16 hours
3D Modeling & 3D Printing (DG3D)**	Grade 4 and up	Course Duration: 8 to 16 hours
All About Computers (CSAC)	Grade 4 and up	Course Duration: 10 to 20 hours

ROBOTICS

Robotics Exploration (RBEX)	Grade K to 2	Course Duration: 8 to 16 hours
WeDo® Robotics (RBWD)	Grade 1 to 4	Course Duration: 8 to 16 hours
Junior Robotics (RBJR)	Grade 1 to 4	Course Duration: 8 to 16 hours
FIRST® LEGO® League Jr (FLLJ)	Grade 2 to 5	Course Duration: 12 to 18 hours
Robotics Engineering (RBNX)	Grade 3 and up	Course Duration: 8 to 16 hours
Virtual Robotics Adventures (RBCA)**	Grade 2 to 5	Course Duration: 12 to 18 hours
Robotics Engineering (RBEV)	Grade 4 to 8	Course Duration: 8 to 16 hours
Cyber Robotics 101**	Grade 5 to 8	Course Duration: 8 to 15 hours
Cyber Robotics 102**	Grade 5 to 8	Course Duration: 8 to 20 hours

GAME DESIGN

Microsoft Kodu Game Lab (GPKD)	Grade 3 to 8	Course Duration: 8 to 16 hours
Game Creation - Arcade (GPAR)**	Grade 3 to 8	Course Duration: 8 to 16 hours
Game Maker – Platform (GPPF)**	Grade 3 to 8	Course Duration: 8 to 16 hours
Advanced Game Maker – RPG (GMRP)**	Grade 3 to 8	Course Duration: 10 to 20 hours

MINECRAFT

Minecraft® Survival Quest (MCSQ)**	Grade 3 and up	Course Duration: 8 to 16 hours
Minecraft® Building Wonders (MCBW)**	Grade 3 and up	Course Duration: 8 to 16 hours
Minecraft® Machine Marvels (MCMM)**	Grade 3 and up	Course Duration: 8 to 16 hours
Minecraft® Mini Games (MCMG)**	Grade 3 and up	Course Duration: 8 to 16 hours
Minecraft® Code Builder (MCCB)**	Grade 4 and up	Course Duration: 10 to 20 hours
Minecraft® Moding with Java (MCMD)	Grade 5 and up	Course Duration: 10 to 30 hours

ANIMATION

Brickfilms Animation (ANBF)	Grade 2 and up	Course Duration: 8 to 16 hours
Stopmotion Studio (ANSS)	Grade 3 and up	Course Duration: 10 to 16 hours
Cartoon Animation (ANCT)**	Grade 4 and up	Course Duration: 10 to 16 hours

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ELECTRONICS

Electronic Gadgets & Gizmos (ELGG)	Grade 4 and up	Course Duration: 8 to 16 hours
Snap Circuits (ELSC)	Grade 4 and up	Course Duration: 8 to 16 hours

COMPUTER PROGRAMMING LANGUAGES

Coding with ScratchJr® (CPSJ)	Grade 1 to 3	Course Duration: 8 to 16 hours
Making Games from Scratch3® (CPS3)**	Grade 3 and up	Course Duration: 8 to 16 hours
App Inventor® (CPAI)**	Grade 4 and up	Course Duration: 10 to 20 hours
Python® 101 (CPPT) **	Grade 5 and up	Course Duration: 12 to 20 hours
Web Development 101 **	Grade 6 and up	Course Duration: 12 to 20 hours
JavaScript® 101 (CPJS)**	Grade 6 and up	Course Duration: 12 to 20 hours

COMPUTER CODING CLUB

Computer Coding A (C00A)	Grade PreK to 1	Course Duration: 8 to 12 hours
Computer Coding 1A (C00A)**	Grade 1 to 3	Course Duration: 8 to 20 hours
Computer Coding 101 (C101)**	Grade 3 to 5	Course Duration: 8 to 20 hours
Computer Coding 201 (C201)**	Grade 5 to 7	Course Duration: 8 to 20 hours
Computer Coding 301 (C301)**	Grade 7 to 9	Course Duration: 8 to 20 hours

PARTIES & EVENTS

Robot Battle (EVRB)	Ages 6 to 14	Event Duration: 1.5 to 2 hours
Lego Brickfilms (EVBF)	Ages 7 to 14	Event Duration: 2 to 3 hours
Minecraft Adventures (EVMC)**	Ages 8 to 14	Event Duration: 1.5 to 2 hours

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LEADNG-EDGE TECHNOLOGY TOPICS

Augmented Reality (CDAR)**   Grade 4 and up
Recommended Course Duration: 8 to 16 hours

Augmented Reality (AR) overlays virtual information on top of a real environment. Students will learn about AR technology and how to use the webcam to build interactive experiences that blend the real and virtual world. They will build interactive AR games using motion recognition, physics, and special effects.

Drone Programming (RBDP)   Grade 4 and up
Recommended Course Duration: 8 to 16 hours

Be inspired by drones! See your code take flight as you program the drones to perform stunts in the air. Conduct simulations on the software, and then try the program on the real thing. Students will be performing "skywriting", taking "selfies/dronies", going through obstacle courses, and designing a screen to control the drone. This course will also discuss what defines a drone, their everyday uses, and the science of how the mini-drones work.

3D Modeling (GP3M)**   Grade 4 and up
Recommended Course Duration: 8 to 16 hours   *Internet Access required*

Want to learn about 3D modeling and 3D printing? Using a 3D modeling software, students learn to design 3D models by selecting, dragging, placing, combining and manipulating the basic shapes such as name plates, keychains, vases, model cars, castles etc. Students will also learn to create more intricate designs by downloading and modifying ready-made 3D models. 3D printing topics will also be discussed.
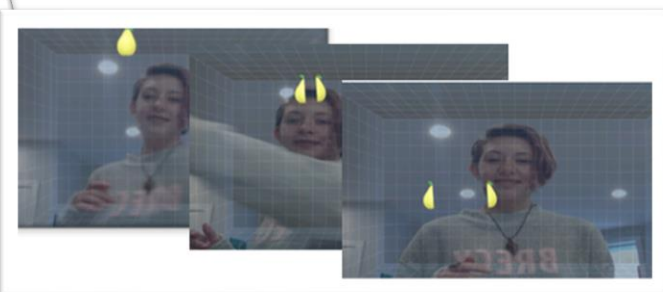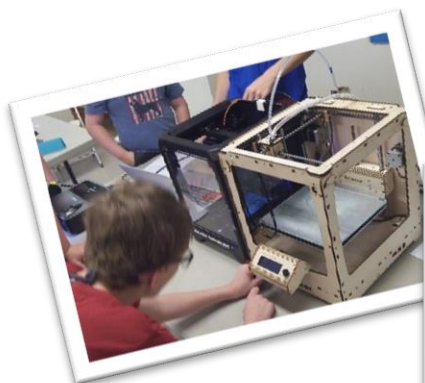
All About Computers (CSAC)   Grade 4 and up
Recommended Course Duration: 10 to 20 hours

Build a computer. Students learn how a computer works by assembling a computer and creating their own apps. Learn to code art, games and music. In addition to learning about computer hardware and software, students will practice the popular design thinking framework and create their own fictional software business.

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ROBOTICS

Robotics Exploration (RBEX) — Grade K to 2
Recommended Course Duration: 8 to 16 hours

Introduce young children to the building and programming of robots. Students build models and then use an easy programming environment to bring them to life. This course emphasizes active, hands-on, and collaborative learning, while enhancing the students' skills in science, technology, engineering and math (STEM).

WeDo Robotics (RBWD) — Grade 1 to 4
Recommended Course Duration: 8 to 16 hours

Exciting introduction to robotics through building models and using a computer to program the models' behavior. Students will build LEGO® models incorporating hubs, motors and sensors. Our models include dancing birds, smart spinner, drumming monkey, roaring lion, hungry alligator, goal keeper, airplane, sailboat etc. Students will learn about simple engineering concepts such as pulleys, belts, gears and levers, while having a blast.

Junior Robotics (RBJR) — Grade 1 to 4
Recommended Course Duration: 8 to 16 hours

Students work with programmable smart hubs, motors, sensors and various LEGO® bricks to build and program models such as helicopters, trucks, gorillas, frogs, dolphins, caterpillars and more. This course offers hands-on activities that ignite students' curiosity while enhancing their skills in science, technology, engineering and coding.

FIRST LEGO League Jr® (FLLJ) — Grade 2 to 5
Recommended Course Duration: 12 to 18 hours

Explore real-world scientific challenges and introduce coding and robot building principles. Participants develop teamwork and collaboration skills and learn how STEM interacts with our world. Each team will culminate in a team presentation at a FLL Jr Expo to showcase their invention and what they have learned. This course will conclude after one Expo event. This course does not include administrative and financial responsibilities such as team registration, robot set purchase, facility to meet, transportation, etc.
General FLLJr Info: https://www.firstinspires.org/robotics/flljr/.
Locations of the Expo will be available in mid-October.

Robotics Engineering NXT (RBNX) — Grade 3 and up
Recommended Course Duration: 8 to 16 hours

Learning about robotics engages students' natural curiosity and helps develop confidence. Their codes come to life in ways they can see, hear, touch and even chase across the room! As students build and program their robots to navigate obstacle courses or wrestle in a Sumo battle, they are learning about programming concepts such as flow charts, repeat loops, conditional loops, sensors, etc.

Cyber Robotics 101 ** (RBC1)   Grade 3 to 8
*Recommended Course Duration: 8 to 10 hours   **Internet access required*

Students will learn the basics of coding and robotics in an environment that provides online simulation and a visual code editor. The course will cover topics, such as navigation, turning and angles, basic math and geometry, loops and various skills related to programming robots.

Cyber Robotics 102 ** (RBC2)   Grade 4 to 8
*Recommended Course Duration: 8 to 20 hours   **Internet access required*

This course introduces autonomous systems, teaches scanning and mapping the environment, error correction methods, and more. Students will understand the physics that influence on the robot performance; learn to program a robot to interact with objects around it and navigate through different changing environments.

Robotics Engineering EV3 (RBEV)   Grade 4 and up
Recommended Course Duration: 8 to 16 hours

This course offer hands-on, cross-curricular STEM solution that engages students by providing the resources to design, build and program their creations while helping them develop essential skills such as critical thinking, collaboration, and communication. Start with an all-terain robot with interchangeable tools, and then move on to a robot that slithers and strikes.

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<div align="center">GAME DESIGN</div>

Microsoft® Kodu Game Lab (GPKD)   Grade: 3 to up
Recommended Course Duration: 8 to 16 hours

Microsoft's Kodu gives users control of a powerful programming tool using simple graphical commands. Students will create 3-D worlds, add characters, and then make them interact or complete tasks. Students will program scoring, spawning characters, enemy objects, timers, health and various game levels. Based on "when something happens", "do something" logic, students analyze problems and structure their solutions.
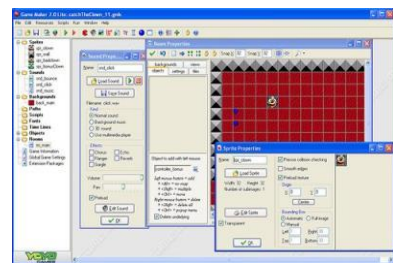
Game Creation - Arcade (GDAR)**   Grade 3 and up
Recommended Course Duration: 8 to 16 hours

Create a customized arcade-style game with elements such as players, enemies, bonuses, levels, and lives. Students decide on the theme, player and enemy characters, design of game levels, health points, number of lives etc.

Intermediate Game Maker - Platform (GDPF)**   Grade 3 and up
Recommended Course Duration: 8 to 16 hours   Experience with Gamemaker software

Learn the foundation of platform games like the Super Mario or Maple Story. The player will jump between suspended platforms, over obstacles or both to advance the game; and to collect bonuses. This course will teach how to implement a side scrolling game with gravity, drawbridges, platforms, levels, effects and more. You will learn how to further your game design skills, as well as reinforcing your knowledge of programming logic.
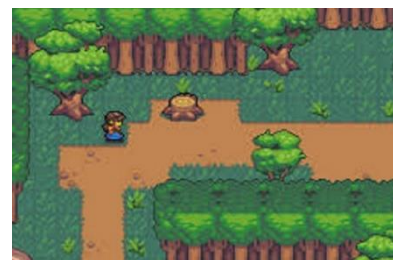
Advanced Game Maker - RPG (GDRP)**   Grade 4 and up
Recommended Course Duration: 10 to 20 hours   Experience with Gamemaker software

Students will design a role playing game (RPG), where player assumes the role of a character. The setting is a fantasy world consisting of a town, forests, dungeons and castles. The player will act out quests through a process of decision making. Students will learn some advanced game design skills such as narratives, enemy behavior and special effects, while expanding their creativity, and technical knowledge to create games of larger scale.

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MINECRAFT

Minecraft® Survival Quest (MCSQ)**   Grade 3 to up
Recommended Course Duration: 8 to 16 hours

Students will navigate the Minecraft world to explore, complete quests, strategize and build creations in a logical way to survive in the virtual 3D world. They will practice creative thinking, problem solving, teamwork and collaboration. Concepts on network, server and client will be discussed.

Minecraft® Building Wonders (MCBW)**   Grade 3 and up
Recommended Course Duration: 8 to 16 hours

This course will provide building tips and tricks to build fancy, realistic-looking stuctures in Minecraft. Students will be replicating real-world structures by applying math to calculate the size of the structure; science to understand the materials; reativity for aesthetic considerations. and more. The course will accumulate with the students' designing, constructing and presenting their own awesome structures in Minecraft.
*This course may be repeated because different themes will be introduced.

Minecraft® Marchine Marvels (MCMM)**   Grade 3 and up
Recommended Course Duration: 8 to 16 hours

Create Minecraft contraptions with items such as red stones, pistons, pressure-plates, levers, buttons, trip wire, lava, dispenser, TNT etc. Learn how to build logic gates and simple machines. These simple machines will be connected to build an entertaining system such as the "Rube Goldberg" machine, or a "Redstone Mansion", etc. In additional to learning about cause and effect, these systems will showcase the students' logical ability as well as creativity. **This course may be repeated because different themes will be introduced.*

Minecraft® Mini Games (MCMG)**   Grade 3 and up
Recommended Course Duration: 8 to 16 hours

Students create interactive mini-games in Minecraft. Instructor will guide students to with creating simple games, and then move on to more complex games. The rules of the games will be analyzed, broken down to functions, and then translated into the Minecraft world. Students will design, plan, build, test, evaluate/redesign and deploy the mini-games. **This course may be repeated because different mini-games will be introduced.*

Minecraft® Code Builder (MCCB)**   Grade 4 and up
Recommended Course Duration: 10 to 20 hours   **Internet access required

This course uses Minecraft to learn about computer science concepts. Whether the students are new to Minecraft or have been playing for years, they will learn to apply important programming skills, and watch their coding creations come to life in Minecraft.

Minecraft® Modding with Java** (MCMD)   Grade 5 and up
Recommended Course Duration: 10 to 20 hours   Prereq: Experience with Minecraft

Learn Java programming with Minecraft! You will design and program your own Minecraft mods such as swords, tools, blocks, foods, biomes, achievements, and mobs. For every item, block or creature, you design the graphics, then modify the Java code to program their new features. Learn the fundamentals of object-oriented programming such as object instantiation, call methods, parameter definitions, and run loops.

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ANIMATION

Brickfilms Animation (ANBF)   Grade 3 and up
Recommended Course Duration: 8 to 16 hours

Lights…Camera…Action! Students' dreams of having their favorite LEGO® characters come to life become a reality in this movie making class. Using stop-action animation and digital post-production editing, students produce Brickfilms much like the ones viewed on YouTube. Students learn about developing creative storytelling techniques, incorporating visual and audio effects and working together.

Stopmotion Studio (ANSS)   Grade 4 and up
Recommended Course Duration: 10 to 16 hours

Stopmotion animation can bring many exciting topics to life: art, story-telling, music videos, science, and more. In addition to learning software skills such as overlay, grid, frame positioning, green screen and other movie effects, students will work with DIY animation material such as clay, toys, felt, paper and everyday objects. This course provides a fun way of providing insight into the animation process.

Cartoon Animation (ANCT)**   Grade 4 and up
Recommended Course Duration: 10 to 16 hours

Bring your imagination to life through cartoons in the style of Nickelodeon or Cartoon Network. Using an intuitive 2D animation software, you will work with drawing tools, bone-rigging system, animation timeline, sound and special effects. This course is a fun and exciting way to introduce students to professional animated cartoon-making.

ELECTRONICS

Electronic Gadgets & Gizmos (ELGG)   Grade 4 and up
Recommended Course Duration: 8 to 16 hours

Students learn the art of innovation through hands-on activities which foster creativity and problem solving. Build and play with electronic components such as motors, lights, switches, servos and buzzers. Connect them together to invent a remote control racecar, build an automatic bubble blowing device, make a bumper ball game and more. Unleash your inner inventor!
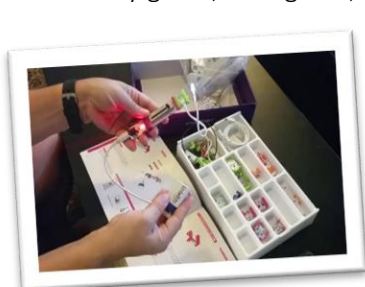

Snap Circuits - Arcade (ELSC)   Grade 4 and up
Recommended Course Duration: 8 to 16 hours

Students use building pieces with snaps, a programmable word fan, a tri-color light orb, a dual LED display, and a microcontroller, to assemble different electronic circuits on a "base grid" that functions like printed circuit board found in electronic products. Learn the basics of electricity, engineering and circuitry while creating fun interactive games that emulate memory game, card game, racing games and more.

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COMPUTER PROGRAMMING LANGUAGE

Coding with ScratchJr (CPSJ) — Grade 1 to 3
Recommended Course Duration: 8 to 16 hours

ScratchJr was designed for younger children as a precursor to other programming languages. Students use programming blocks to bring their characters to life by controlling how their characters look and move and adding sounds and images. They learn to think sequentially, practise problem-solving skills, explore cause and effect, and have fun!

Making Games from Scratch (CPS3)** — Grade 4 and up
Recommended Course Duration: 8 to 16 hours

Calling all creative young gamers! Learn key concepts to creating your own interactive and fun games with Scratch3®. Students will apply programming concepts such as branching, variables, loops, to create simple games to more complicated games such as different levels and sound effects.

App Inventor (CPAI)** — Grade 4 and up
Recommended Course Duration: 8 to 20 hours **Internet access required*

Want to make mobile apps? Learn how to build apps for Android devices. The software transforms the complex language of text-based coding into visual, drag-and-drop building blocks. This course will progress through building increasingly complex apps. Students will learn how to build apps, as well as programming concepts and terminology.

Python 101 (CPPT)** — Grade 5 and up
*Recommended Course Duration: 12 to 20 hours **Internet access required*

Python has a gentle learning curve, but is a serious language that is used by professional programmers. Complete engaging lessons, solve challenging puzzles, and create interesting programs. This class will cover Python syntax, sequencing, repetition, conditional logic, nested loops, automation, pattern recognition, operators, expressions, variables, Turtle graphics and using arrays and objects to store structured data.

Web Development 101 (CPWD)** — Grade 6 and up
*Recommended Course Duration: 12 to 20 hours **Internet access required*

Students will be introduced to web page development using HTML and CSS. As students work on hands-on practical projects, programming challenges, and assessment quizzes, they learn about paragraphs, lists, tables, inserting images, audio and video, hyperlinking and more. Students who completed this course will be to create their own web sites from scratch.

JavaScript 101 (CPJS)** — Grade 6 and up
*Recommended Course Duration: 12 to 20 hours **Internet access required*

Students will be introduced to JavaScript as they complete engaging lessons, solve challenging puzzles, and build their own games. Students who successfully complete this course will demonstrate a strong mastery of JavaScript syntax, as well as the ability to program games and other projects, and debug their own code. Students will also be able take the game design implementation process and creating custom versions of many of their favorite games in JavaScript.

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COMPUTER CODING CLUB

These courses introduce programming fundamentals through grade-specific curriculums which allow students to move at their own pace. Students learn programming concepts through visual programming or block coding in a game-like interface. They will be having so much fun, that they will not realize that they are learning coding.

Computer Coding A (C001)   Grade PreK to 1
Recommended Course Duration: 8 to 12 hours
Topics include: Sequencing; Flexible sequencing; Repetition; Conditional loops; Debugging; Pattern recognition; Conditional Logic.
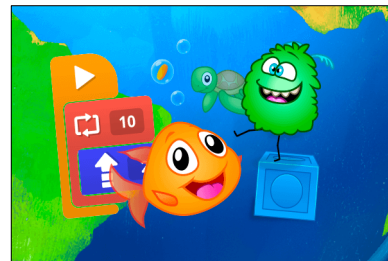
Computer Coding 1A (C010) **   Grade 1 to 3
Recommended Course Duration: 8 to 20 hours
Topics include: Sequencing; Repetition; Conditional logic; Automation; Pattern recognition
Keyboard and mouse events; Playing sounds; Simple motionAnimation

Computer Coding 101 (C101)**   Grade 3 to 5
Recommended Course Duration: 8 to 20 hours
Topics include: Sequencing; Repetition; Events; Conditional logic; Animation; Pen drawing; Drawing shapes and patterns; Playing musical notes; Sending and receiving messages; Handling user input; Color detection; Actor layering; Advanced events; Math operators

Computer Coding 201 (C201)**   Grade 5 to 7
Recommended Course Duration: 8 to 20 hours
Topics include: Sequencing; Pattern recognition; Loops; Conditional logic; Keyboard controls; Motion; Broadcasting; Geometric patterns; Angles; Projectile physics; Physics engine; Gravity; Collisions; Impulse; Velocity; Force; Timers; Special effects

Computer Coding 301 (C301)**   Grade 7 to 8
Recommended Course Duration: 8 to 16 hours   ****Internet access required*
Topics include: Events; Keyboard and mouse interaction; Conditional loops; Nested loops; Fluid motion; Parallax scrolling; Local & Global variables; Functions; Object cloning; Parameters; Functions; Advanced conditional logic; Math Boolean operators

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EVENTS & PARTIES

Robot Battle Party (EVRB)   Ages 6 to 14
Recommended Duration: 1.5 to 3 hours

Invite Computer Adventures and we will show up with all of our LEGO® Mindstorms NXT robot pals! During the party, you and your friends will program and customize your robots to battle head to head on our Sumo Battle board. CAUTION: Robot battles can be exciting and inspiring. Be prepared for an extraordinary amount of screaming and laughter!
For children 6 & 7 years old, 90-minute party is recommended.
For children younger than 5 years old, an adult/teenage assistant is needed for each child.

LEGO Brickfilms Party (EVBF)   Ages 7 to 14
Recommended Duration: 2 to 3 hours

Lights…Camera…Action! This party/event will have the kids' LEGO® characters come to life. Using stop-motion animation and digital editing, students produce LEGO® brickfilms much like the ones viewed on YouTube. At the end of the party, we will have a "Movie Premiere" showing off all the movies that the children made. The host will get an Internet link to download kids' movies. CAUTION: The next young "Steven Spielberg" or "George Lucas" may be in our midst!
For children younger than 7 years old, an adult/teenage assistance is recommended for each child.

Minecraft Adventures Party (EVMC) **   Ages 8 to 14
Recommended Duration: 1.5 to 3 hours

You and your friends will work together to create a Minecraft Adventure Map! Our instructor will guide you with a story theme, and the map creation process. When the map is done, you will play with your Minecraft creation. We will provide a server, router, projector, and every child with a laptop, which is connected through our local network without access to the Internet. It's safe,   fun, and exciting!

** Online classes are available in addition to in-person classes