

Weekly Coding Courses

Trial / appreciation For ages 8+ \$80 / 2-hour session



Introduction to Coding with Scratch \$520 / 8 x 2-hr sessions

- For ages 8+.
- Introduction to coding using Scratch, block-based progamming.
- Create games, animations & stories.



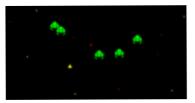
Python Coding -Level 1 \$520 / 8 x 2-hr sessions

- For ages 10+.
- Introduction to programming & Python (syntax, print function, users input, decision making, loop structures & function).



Python Coding - Level 2 \$520 / 8 x 2-hr sessions

- For ages 10+ who have completed Python 1.
- Learn print function, decision commands, flowcharts, create own functions, use list in Python & for-loop method.



Python Coding -Level 3 Games \$520 / 8 x 2-hr sessions

- For ages 10+ who have completed Level 2.
- Guided step-by-step in making games.
- Learn to apply commands, add sound & background image.
- Publish & share your game!



Arduino Robotics & C++ \$520 / 8 x 2-hr sessions

- For ages 11-16.
- Introduction to Arduino micro-controller, C++ programming & basic electronic components.
- Program Arduino using Scratch, with electronic sensors & actuators (motors, buzzers & displays).



Artificial Intelligence (A.I.) \$520 / 8 x 2-hr sessions

- For ages 10+ with coding experience.
- Introduction to Artificial Intelligence, including applications in daily life.
- Understand Machine Learning & Deep Learning.
- Program A.I. applications with image, text or sound recognition.

<u>Mon - Sat</u> 10am -12noon* 1:30pm - 3:30pm 3:30pm - 5:30pm *only non-holiday camp periods

> <u>Sun</u> 3pm - 5pm

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Weekly Robotics Courses

Trial / appreciation For ages 6+ \$80 / 2-hour session



Level 1 Beginner \$460 / 8 x 2-hr sessions

- For ages 6+, preferably with experience in our Lego Engineering courses.
- Develop building skills & an understanding of simple coding concepts.
- Lego WeDo/NXT/Funbots.



Level 4 Young Inventor \$460 / 8 x 2-hr sessions

- For ages 9 to 10 who have completed Level 3, have knowledge of key NXT robotics parts, can program NXT-G independently & can attend on a regular basis.
- Design & create own NXT robot, plus presentation of the project.



Level 7 SPIKE Advance \$520 / 8 x 2-hr sessions

- Design, build & program own robot, using Lego SPIKE Prime basic & expansion sets.
- Meet criteria in terms of size & number of sensors used.
- Apply engineering concepts in robot design.
- Present project in a video recording.



Level 2 / 2A Beginner \$460/ 8 x 2-hr sessions

- For ages 8+, or those who have completed Level 1.
- Build & program intermediate robotics models using Lego NXT with different sensors & perform different tasks.



Level 5 SPIKE Beginner \$520 / 8 x 2-hr sessions

- For ages 9+, or those who have completed Level 4.
- Build & program simple robots, using Lego SPIKE Prime app.
- Apply knowledge of force, color & ultrasonic sensors.



Level 8 EV3 Basics \$520 / 8 x 2-hr sessions

- For ages 11+, or those who have completed Level 7.
- Build robots using Lego EV3 robotics.
- Program movements with EV3 sensors.
- A theory & practical assessment will be conducted to assess learning progress & suitability to proceed to the next level.



Level 3 / 3A Intermediate to Advance \$460 / 8 x 2-hr sessions

- For ages 9 to 10 who have completed Level 2.
- Build more complicated robots & program them to respond to multiple sensors, using Lego NXT blocks.



Level 6 SPIKE Intermediate \$520 / 8 x 2-hr sessions

- For those who have completed Level 5.
- Build & program robots with multiple sensors & more complex mechanical designs, using Lego SPIKE Prime.
- Application of Gyro Sensor
- Program with advanced EV3 commands.

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Weekly Robotics Courses

Trial / appreciation For ages 6+ \$80 / 2-hour session



Level 9A / 9B EV3 Intermediate \$520 / 8 x 2-hr sessions

- For ages 11+ who have completed Level 8 & keen to explore advance EV3 models.
- Build EV3 robots with multiple sensors & more complex mechanical designs.
- Program with advance EV3 commands, line following & obstacle avoidance robots.



Level 10 Young Inventor II \$520 / 8 x 2-hr sessions

- For ages 12+ who are keen to develop programming skills & able to work independently.
- Design, build & program own robot to perform specific tasks.
- Prepare a presentation of the project.



Level 11 EV3 Advance/Robot Inventor \$520 / 8 x 2-hr sessions

- For ages 12+.
- Learn mOwayWorld programming for mOway minirobots, Scratch programming for mOway/Lego NXT robots, RobotC for Lego NXT & EV3, Arduino Robotics, C++ & Raspberry Pi programming.



Micro:Bit Robotics \$520 / 8 x 2-hr sessions

- For ages 9+.
- Introduction to Micro:Bit & coding.
- Program Micro:Bit using block method.
- Build & program a Micro:Bit robot (GiggleBot) for autonomous & remotecontrolled movements.



Robotics Competition Preparation \$520 / 8 x 2-hr sessions + competition registration fees*

- First Lego League (FLL), National Robotics Competition (NRC), IDE Series & RIC *registration fees vary.
- Strictly by invitation.
- Invitees will represent Robotics Connection in a team.

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Weekly Lego Engineering Courses



Apprentice Engineer

\$60 / 1 x 1-hr trial \$220 / 4 x 1-hr weekday sessions (6 -wk validity) \$400 / 8 x 1-hr sessions (12-wk validity)

- For ages 5-6.
- Introduction to construction & basic mechanisms.
- Develop fine motor skills & visual-spatial abilities, while exploring various concepts, such as cause & effect, gears, pulleys & more.

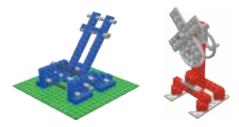


Senior Engineer - Levels 1 and 2

\$55 / 1 x 1-hr trial session \$200 / 4 x 1-hr weekday sessions (6-wk validity) \$360 / 8 x 1-hr sessions (12-wk validity)

- For ages 8+, *or those who have completed Junior Engineer.
- Build more complex Lego machines.
- Learn more in-depth about various physics and engineering concepts, including gear ratios, lever classes, stability, among others.

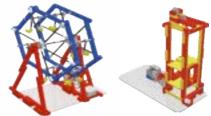
<u>Mon/Tue/Wed/Fri</u>	<u>Sat</u>
1pm - 2pm	10am - 11am
2pm - 3pm	11am -12pm
3pm - 4pm	1pm - 2pm
4pm - 5pm	2pm - 3pm
<u>Thur</u>	3pm - 4pm
3pm - 4pm	4pm - 5pm
4pm - 5pm	



Junior Engineer - Levels 1 & 2

\$55 / 1 x 1-hr trial session \$200 / 4 x 1-hr weekday sessions (6-wk validity) \$360 / 8 x 1-hr sessions (12-wk validity)

- For ages 6-8, *or those who have completed Apprentice Engineer.
- Introduction to a variety of mechanical designs & concepts.
- Build different kinds of Lego machines.
- Explore & develop an understanding of various science concepts, such as friction, gravity, gears & levers, as well as their real-life applications.



Master Engineer

\$55 / 1 x 1-hr trial session \$200 / 4 x 1-hr weekday sessions (6-wk validity) \$360 / 8 x 1-hr sessions (12-wk validity)

- For ages 9+, *or those who have completed Senior Engineer.
- Build Lego machines that are larger in scale & more complex in terms of mechanical design.
- Apply all previous building skills & science concepts acquired to complete and problemsolve the projects.



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