

## COURSE CATALOG 2024-25

We are dedicated to providing leading-edge technology education for children from Pre-K to Grade 8. Our mission is to provide a safe and fun environment that fosters not only technical skills but also critical thinking, problem-solving, collaboration, and creativity.

Since 2009 we have partnered with parents, educational institutions, recreation centers, and diverse organizations, offering enriching classes, camps, events, and consulting services. Our flexible learning options include virtual, in-person, hybrid, as well as public and private group classes. With private group classes, we can accommodate your course, schedule and venue preferences. We can also provide the equipment needed along with our expert instructors.

### CODING/PROGRAMMING

#### **CODING 00A : JUNIOR CODERS (C00A)**

**PRE-K TO GRADE 2**

This course introduces beginners and non-readers to coding using captivating picture-based icons. Master essential concepts like sequencing, loops, pattern recognition, and conditional logic through interactive activities. Our intuitive software ensures an accessible and enjoyable learning experience with big blocks, pictures, voice-overs, and tap-tap-tap interactions. Nurture critical thinking and problem-solving skills, laying the foundation for fundamental programming knowledge in our young learners.



#### **CODING ARTS FOR YOUNG DIGITAL ARTISTS (CSJD)**

**K TO GRADE 2**

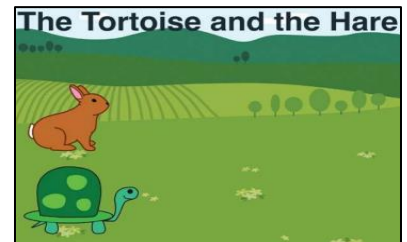
Students will learn about animation, in which still images are programmed to create moving images with sounds and visual effects. Students breathe life into their characters, customizing their appearance, movements, and adding engaging sounds and images. Students will learn the basics of animation and motion, create and animate characters using loops and sequences, use coding to add movement and effects. Both beginners and those with some coding experience will find this course engaging and educational.



#### **CODING STORIES FOR YOUNG STORYTELLERS (CSJS)**

**K TO GRADE 2**

Digital Stories is the process of combining several digital elements like pictures, voice, music, text, and movement to create a narrative. Students will be able to code many stories with the elements already available on the app, or create their own customized scenes and characters. Students will create their interactive stories, while learning basic coding concepts such as sequential thinking, problem-solving, cause-and-effect, and more. Beginners and experienced young coders are welcome!

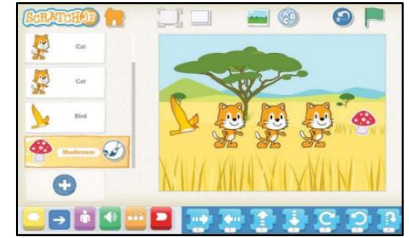


## COURSE CATALOG 2024-25

### CODING GAMES FOR YOUNG GAME MAKERS (CSJG)

K TO GRADE 2

Step into the world of game making! This course teaches young children how to create their own simple and fun games using basic coding concepts such as sequences, loops, conditionals, and events. Students will learn about basic game design principles, create simple interactive games and use coding to develop mechanics like scoring and controls. Both beginners and experienced coders will enjoy designing and playing their own games.



### CODING 01A : SPACE EXPLORERS (C01A)

GRADE 2 TO 3

Blast off into an exhilarating coding odyssey that leads students to space. In this course, young learners engage in computational thinking and computer science fundamentals using user-friendly code blocks. Guided by intuitive puzzles, they assist astronauts in gathering spaceship parts and unlock space mysteries. By the completion of this course, students will master coding problem-solving, write algorithms with loops and conditionals, and confidently debug simple programs. Get ready for an out-of-this-world adventure with Space Explorers!



### CODING FUN WITH SCRATCH (LSCF)

GRADE 2 TO 3

Designed for beginners, students will go on a creative journey using Scratch®, a popular graphical programming language created by MIT Media Lab. Guided by our expert instructors, they will create interactive projects, including animated names, racing games, interactive stories, Pong games, and more. Through step-by-step instructions, students will grasp coding concepts such as sequencing, conditionals, and variables. Join us and unlock the magic of programming!



### CODING 101 : CODING ADVENTURES ( C101)

GRADE 3 TO 5

Ignite the imagination of elementary students with this introductory course on block programming. Through a dynamic interface, students will learn essential concepts such as sequencing, repetition, events, and conditional logic. They will embark on creative adventures, crafting interactive scenes, animated stories, music machines, games, and more. Students will develop problem-solving skills and gain the ability to troubleshoot and debug simple programs.



### CODING GAMES WITH SCRATCH® (LSCG)

GRADE 3 TO 8

Welcome to the world of game development with Scratch, a visual programming language. This course is designed to introduce students to programming concepts through the creation of interactive games. In addition to learning programming basics such as sequencing, loops, events, conditionals, variables, functions, students will learn how to design, program, and customize their games while developing essential computational thinking skills in a creative and engaging environment.

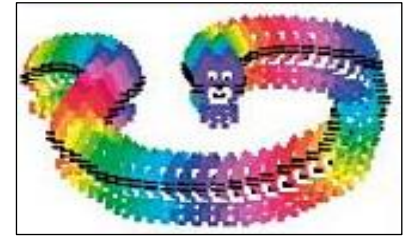


## COURSE CATALOG 2024-25

### ANIMATIONS WITH SCRATCH® (LSCA)

GRADE 3 TO 8

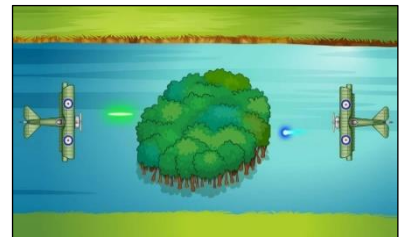
Create mind-bending illusions, crazy animations, and interactive artwork using Scratch®, a popular programming language for students. Suitable for beginners and experts alike. Step by step instructions will be provided to teach essential coding basics through fun and exciting projects such as Cat Art, Dino Dance Party, Fireworks & Snowflake simulations, Magic Spot mindbender, and more. Students are encouraged to think creatively and reason systematically.



### CODING 201 : CODING WONDERLAND (C201)

GRADE 5 TO 6

Unlock the world of block programming for upper elementary students with our engaging course. Using a scenario-based approach, students will delve into game design, animation, and music. Through hands-on activities, they will learn sequencing, pattern recognition, loops, conditional logic, scene creation, sound integration, keyboard controls, motion, message broadcasting, and special effects. By the end of this course, students will be equipped to build simple games, animations, and various projects.



### PYTHON PROGRAMMING 101 (LPY1)

GRADE 5 TO 12

This course teaches basic programming and problem-solving using Python, a powerful language used in college courses and in tech companies like Google, Facebook, Netflix, and more. This is a friendly introduction to fundamental programming concepts such as variables, loops, conditionals, and more which will help build skills they need to make their own cool programs.

*Prerequisite: Comfortable with typing*



## ROBOTICS

### LEGO EARLY SIMPLE MACHINES (RESM)

PREK TO GRADE 1

This course provides opportunities for young children to develop an understanding of science and technology concepts through hands-on activities. Students will discover the workings of gears, wheels, axles, levers, and pulleys. They will match solutions to needs, choose appropriate materials, design, build, and test their work. 2-dimensional instructions will be used to create 3-dimensional models as students work cooperatively in a team while having fun!

*\*Screen-Free Activity*



### JUNIOR ROBOT BUILDER (RBJR) \*NEW!

K TO GRADE 2

Through step-by-step instructions, young engineers will construct a variety of robots, from moving animals and powerful construction vehicles to speedy cars and spinning space stations. Learn to bring your creations to life with gears and motors while learning the mechanical basics of robots. This course fosters creativity, problem-solving, and teamwork, making learning both fun and educational. Get ready to build, power, and play with your own robots!

*\*Screen-Free Activity*



**COURSE CATALOG 2024-25****ROBOTICS EXPLORATION (RBEX)****K TO GRADE 3**

Ignite young students curiosity and enhance their STEM skills through this hands-on robotics course. Students build and program models like snails, rovers, race cars, frogs, and more, using programmable smart hubs, motors, sensors, and LEGO® bricks. Introducing an easy programming environment, this course empowers students to bring their creations to life, providing a fun and engaging introduction to the exciting world of building and programming robotics.

**WONDER ROBOT CODING (RBWR) \*NEW!****K TO GRADE 3**

This course is designed to introduce young children to the fundamentals of coding through fun and interactive activities. Students will explore the exciting world of coding and robots as they see their code come to life when they program our adorable robots to dance, speak, and interact with their surroundings. In addition to understanding coding concepts, students will learn about problem-solving and teamwork.

**WEDo ROBOTICS (RBWD)****GRADE 1 TO 3**

An 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, and more. Students will learn about simple engineering concepts such as pulleys, belts, gears, and levers while having a blast.

**ROBOTICS & CODING ESSENTIALS (RBCE)\* NEW!****GRADES 3 TO 5**

This hands-on course introduces students to the basics of building and programming, allowing them to design, create, and animate their own robots. Through fun and interactive activities, students will explore the world of sensors, motors, and simple programming concepts while enhancing their critical thinking and teamwork abilities. This course provides a solid foundation in STEM that is both educational and entertaining, encouraging innovation and confidence at every step.

**ROBOTICS ENGINEERING ADVENTURES (RBEA)\*NEW!****GRADE 4 TO 8**

Discover the excitement of robotics engineering. Students will build and program their own robots, exploring concepts such as sensors, motors, and basic coding principles. Through interactive projects and challenges, students will enhance their problem-solving and teamwork skills, all while sparking their creativity and curiosity. This course is ideal for both beginners and those with some experience, offering a fun and supportive environment for all aspiring tech enthusiasts.



**COURSE CATALOG 2024-25****DIGITAL DESIGN****LEGO BRICKFILMS : STOP-MOTION ANIMATION (ANBF)****GRADE 3 TO 5**

Lights...Camera...Action! Students' dreams of having their favorite LEGO® characters come to life become a reality in this movie making class. Using stop-motion 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 teamwork. This is a fun course to take with a friend.

**CARTOON ANIMATION (ANCA)****GRADE 4 TO 6**

Step into the exciting world of 2D animation! This course is perfect for young artists, beginners, and digital enthusiasts eager to bring their characters to life. Learn to create captivating 2D animations using intuitive vector-based tools. Dive into the bone rigging system, effortlessly animating 2D characters with ease. Export and share your creations. Join us on this animated adventure and let your creativity soar!

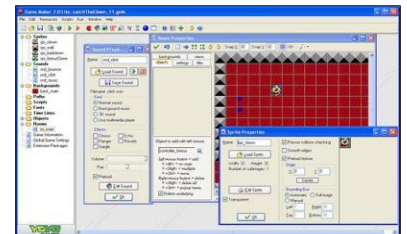
**3D MODELING & 3D PRINTING (G3MP)****GRADE 4 TO 8**

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, and more! 3D printing topics will be discussed and demonstrated.

*\*Internet access required*

**GAME DEVELOPMENT****ARCADE GAME PROGRAMMING (GDAR)****GRADE 3 TO 8**

Inspire your child's imagination and coding skills as they create their very own customized arcade-style game. Through hands-on activities, they will design the game of their own that includes the player, enemies, bonuses, levels, lives, and more. With a focus on logical thinking and programming concepts, such as conditionals, control structures, variables, and syntax, students will not only have fun but also gain technical knowledge. Watch them have a blast while learning and achieving a sense of accomplishment in this course.

**CREATIVE GAME DESIGN \* (GDCG)****GRADE 3 TO 8**

Draw, Snap, Play! Engage in an exciting STEAM program that combines physical and digital elements to explore the world of game design and storytelling. This course nurtures creativity and cultivates essential 21st-century skills through a fun and accessible game-making process. Students unleash their imagination as they draw on a paper, snap a picture of their drawing, and bringing their games to life on the computer.

*\*Internet access required*



**COURSE CATALOG 2024-25****ROBLOX STUDIO: OBBY ADVENTURES \* (RSOA)****GRADE 4 TO 8**

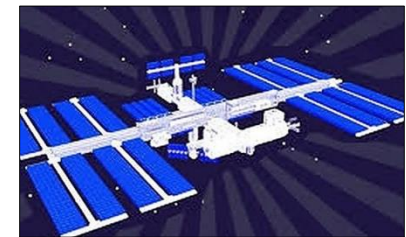
Roblox is an online game platform that enables its players to design, build and share interactive 3D worlds. In this introductory course, students will apply their creativity, problem-solving and computational skills to design, build and playtest their own obstacle course (obby). They will manipulate 3D models to create an obstacle course, use Roblox pre-built game creation functions, and create some simple scripts with LUA programming language to customize features in their own obby game.

*\*Internet access required*

**MINECRAFT****MINECRAFT & SCIENCE: INTERNATIONAL SPACE STATION \* (MISS)****GRADE 3 TO 8**

Whether you are a Science buff or not, you will love our Science activities in Minecraft. Explore the International Space Station in Minecraft. Students will board the International Space Station and learn about rockets, solar energy, robots, landforms, magnetism, plants and gravity, water filtration, and more. They will apply what they learn by designing and building their own space station in Minecraft.

*\*Internet access required*

**MINECRAFT® BUILDING WONDERS (MCBW)****GRADE 3 TO 8**

This course will provide building tips and tricks to build fancy, realistic-looking structures in Minecraft. Students will be replicating real-world structures by applying math to calculate the size of the structures, science to understand the materials, creativity for aesthetic considerations, and more. The students' cumulating project will be designing, constructing, and presenting their own awesome structures in Minecraft.

*\*Internet access required*

**MINECRAFT® REDSTONES : MACHINE MARVELS (MCMM)****GRADE 3 TO 8**

Learn how to build logic gates and simple machines in Minecraft. Create Minecraft contraptions with items such as redstone, pistons, pressure plates, levers, buttons, tripwire, lava, dispenser, TNT, and more. All students' contraptions will be connected to build an entertaining system such as the "Rube Goldberg" machine.

*Prerequisite: Some Minecraft experience*

*\*Internet access required*



**COURSE CATALOG 2024-25****MINECRAFT & CODING: MAKECODE 101 \* (MCC1)****GRADE 3 TO 8**

This course uses Minecraft to learn about computer coding 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 with Microsoft MakeCode software. The lessons aim at teaching the basics programming concepts such as events, sequencing, variables, loops, conditionals, and more.

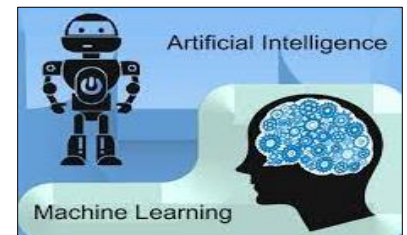
*Prerequisite: Some Minecraft experience*

*\*Internet access required*

**ARTIFICIAL INTELLIGENCE****ARTIFICIAL INTELLIGENCE: MACHINE LEARNING 101 \* (AIMS)****GRADE 4 TO 8**

Uncover the fascinating realm of artificial intelligence in this engaging, hands-on course. Through machine learning experiences, students will collect data, train the ML system, and apply the models to coding projects using Scratch®. Each project will foster creativity and showcase real-world AI applications. Embark on this captivating journey to gain a deep understanding of AI concepts while creating interactive coding projects. Join us for a thrilling exploration of artificial intelligence!

*\*Internet access required*

**WEB DESIGN****WEB DESIGN WITH WIX 101\* (LWX1)****GRADE 5 TO 12**

Discover the art of crafting interesting and dynamic websites using Wix, a free, powerful cloud-based website builder platform. In this course, young creators will explore design concepts such as layout, contrast, readability, vector art and interactive elements to enhance user experiences. They will build professional-looking websites on their favorite topics. Students can keep their Wix website after the course. Delight in the joy of creating together with this exciting curriculum!

*\*Internet access required*

**HTML & CSS 101 (LHC1)****GRADE 6 TO 12**

Students will be introduced to web page development using HTML and CSS. As students work on hands-on practical projects and programming challenges, 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 pages and link them together to make a website.

*Prerequisite: Comfortable with typing.*

