

YEAR-ROUND STEAM PROGRAM



We have designed a unique STEAM curriculum for 32 weeks. This is a Year-round STEM program to develop programming, game design, robotics skills along with entrepreneur mindset. We have designed our curriculum based on **International Society for Technology in Education (ISTE) standard**. There

are 12 levels on this curriculum for grade 1-12. We are not offering STEAM DESTINATION this year as this is a gradual progression from other levels.

PROGRAM LEVELS

STEAM Quest

- Level 1 and Level 2

STEAM Exploration

- Level 3 and Level 4

STEAM Discovery

- Level 5 and Level 6

STEAM Expedition

- Level 7 and Level 8

STEAM Escapade

- Level 9 and Level 10

STEAM Destination

- Level 11 and Level 12

STEAM Star

- for middle and high school

WHO CAN APPLY?

Students entering grade 1 -10 this fall can apply. Students interested to join the course need to be motivated, dedicated and recommended by someone from school or family. We admit only 12 students per grade. Therefore only the students who have the right aptitude and enthusiasm to learn are a good fit.

If your kid is the right candidate please email the recommendation letter to camp@tymemachine.org by **August 12, 2018**.

The subject line of the recommendation letter should have the Program Name and the Student Name in the subject line. Example for 1st grader you will enter "STEAM QUEST 1 for John Smith" for 4th grader you will enter "STEAM EXPLORATION 4 for Mary Smith


IMPORTANT DATES

Aug 08, 2018 – Send Recommendation Letter
Aug 22, 2018 – Registration Completion

Aug 15, 2018 – Determination Letter
Sep 03, 2018 – The season begins"

WHEN IS THE COURSE?

The course is offered once a week for 75 minutes for any grade. The schedule for each grade/level is as follows

	3:30- 4:45pm	5:00-6:15pm	6:30-7:45pm	
Monday	Escapade 9	Quest 1	Quest 2	
Tuesday	Escapade 10	Exploration 3	Exploration 4	
Wednesday	TymeStar	Discovery 5	Discovery 6	
Thursday		Expedition 7	Expedition 8	

We have winter break from **Dec 24 to Jan 6th** and spring break from **Mar 18th to 22nd**. We will not hold any replacement class if you miss any class. In case of bad weather day the session will shift and the class will be scheduled between May 5th and May 20th.

WHAT WILL THEY LEARN?

	Elementary				
Weeks	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
1 to 6	Block Coding 1	Block Coding III	Scratch I	Scratch II	Scratch III
7 to 12	Presentation	Presentation	Real Life Problem	Real Life Problem	Real Life Problem
13 to 18	Block Coding II	Kodu Lab	Roblox I	Roblox II	Roblox III
19 to 24	Robotics I	Robotics II	Robotics III	Robotics IV	Robotics V
25 to 32	Entrepreneurship	Entrepreneurship	Entrepreneurship	Entrepreneurship	Entrepreneurship
	Middle			High School	
Weeks	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
1 to 6	Python I	Python II	Python III	Java I	Java II
7 to 12	Python I	Python II	Python III	Java I	Java II
13 to 18	Web Design I	Web Design II	Web Design III	Sql I	Sql II
19 to 24	Robotics VI	Robotics VII	Robotics VIII	Data Science I	Data Science II
25 to 32	Entrepreneurship	Entrepreneurship	Entrepreneurship	Entrepreneurship	Entrepreneurship

WHAT TO EXPECT AT THE TYMACHINE STEAM PROGRAM

1 Empowered Learning

Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.

2 Digital Citizenship

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

3 Knowledge Construction

Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.

4 Innovative Design

Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.

5 Computational Thinking

Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

6 Creative Communication

Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.

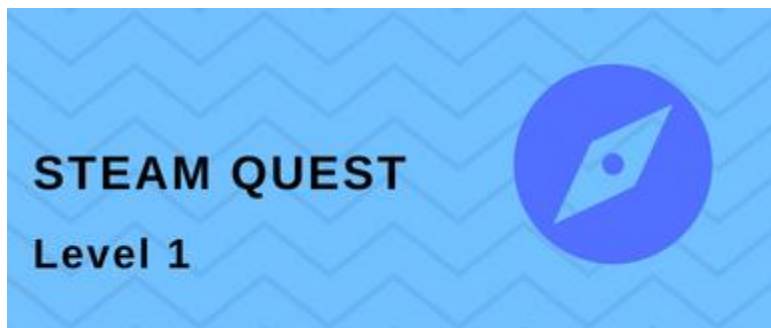
7 Global Collaboration

Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

PROGRAM MODULES

The program requires 75 minutes class time and 1 to 2 hour home work time. It integrates rich, interactive media such as videos as well as traditional components such live sessions, group projects, active coaching, and individual assignments. Collaborative learning is the cornerstone of this program and students can accelerate their own learning by individual research and teamwork.

QUEST 1



In the first 6 weeks of fall they will be learn sequence and algorithms in coding. In the next 6 weeks of fall they will learn presentation skills and work on two mini projects utilizing the coding and presentation skills they have learned. In the first 6 weeks of Winter they will work on learning conditional statements in coding and in the

next 6 weeks of Winter they will work on simple robotics project and create a working prototype of simple machine with LED s. 8 weeks of spring they will work on developing their entrepreneur skills where they will learn to build a simple product that they can produce many may times following the same iterative principle. They will learn to sell the product to friends and families and the year will culminate with a big celebration event. We need minimum 6 students to hold this program

QUEST 2



In the first 6 weeks of fall they will learn loops, functions and algorithms in coding. In the next 6 weeks of fall they will learn presentation skills and work on two mini projects. In the first 6 weeks of winter they will work on learning Kodu Lab and design simple desktop games. In the next 6 weeks of winter they will work on robotics and

create a Robot with motion using motors and fan. 8 weeks of spring they will work on developing their entrepreneur skills where they will learn to build a simple product that they can produce many may times following the same iterative principle. They will learn to sell the product to friends and families and the year will culminate with a big celebration event. We need minimum 6 students to hold this program

EXPLORATION 3



In the first 6 weeks of fall they will learn basics of Scratch Programming and algorithms in coding. In next 6 weeks in fall they will work on identifying and solving a real life problem. In the first 6 weeks of winter they will learn beginner level Roblox Game design and 3D model. In the next 6 weeks of winter they will work on Robotics and create

a working prototype of a robot using DC motors and gears. 8 weeks of spring they will work on developing their entrepreneur skills where they will build a product just like a junior start up and the year will culminate with a big celebration event. We need minimum 6 students to hold this program

EXPLORATION 4



First 6 weeks of Fall they will learn intermediate Skills of Programming in Scratch. The next 6 weeks of Fall they will learn to work on a Real life Problem and create realistic technological solution for the real - world problems. In the first 6 weeks of Winter they will work on learning how to code in Roblox using LUA and apply skills to write

Scripts .In the next 6 weeks they will work on robotics and create a working prototype of a robot using Servo Motors and Light Sensor. 8 weeks of spring they will work on developing their entrepreneur skills where they will build a product just like a junior start up and the year will culminate with a big celebration event. We need minimum 6 students to hold this program

DISCOVERY 5



First 6 weeks of Fall they learn Advanced Skills of Programming in Scratch. The next 6 weeks of Fall they will work to solve a Real life Problem and create realistic technological solution for the real - world problems. In the first 6 weeks of Winter they will learn advanced Roblox using LUA scripting and apply skills to write Scripts to design a game

in Roblox. In the next 6 weeks of winter they will learn the principles of engineering to create a working prototype of a robot using multiple sensors. 8 weeks of spring they will work on developing their entrepreneur skills where they will build a product just like a junior start up and the year will culminate with a big celebration event. We need minimum 6 students to hold this program.

DISCOVERY 6



This is a Year around program for 6th graders where they will be introduced to text programming in Python and they will learn about datatypes, variables, input functions, arithmetic expression, conditional execution and iterations. This will be followed by students doing three projects in the Fall. In Winter they will be introduced to concept of

Web designing using HTML during the course students are introduced to planning and designing effective web pages; implementing web pages. Students will also be doing a project in Web Design. Also they will be creating a working prototype of a robot by utilizing the principles of engineering design method. In spring they will work on building product that they will sell and the year will culminate with a big celebration event. We need minimum 6 students to hold this program

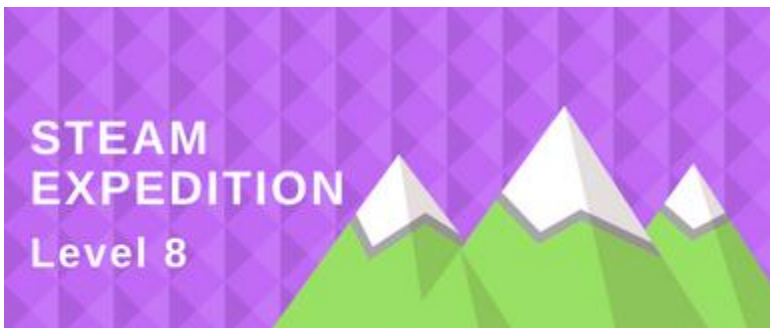
EXPEDITION 7



This is a Year lone 32 weeks program for 7th graders. First 12 weeks in Fall they will work with Intermediate level Python and learn to solve problem using conditional statements, iterations and lists. In first 6 weeks of winter they will be learning intermediate skills of Web designing using HTML and CSS and introduction to JavaScript .Next 6 weeks of

winter they will also create a working prototype of a robot by utilizing the principles of engineering design method. In 8 weeks of spring they will learn about entrepreneurship and they will work on building product that they will sell and the year will culminate with a big celebration event. We need minimum 6 students to hold this program.

EXPEDITION 8



This is a Yearlong 32 week program for 8th graders. The first 12 weeks they will be working on Advanced Level Python. They will be able to optimally solve complex problems including search and sorting algorithm. In first 6 weeks of winter they will be learning advanced skills of Web designing using HTML, CSS and JavaScript. The last 6

weeks of winter they will work on Robotics. For 8 weeks in Spring they will learn about entrepreneurship and they will work on building some product that they can produce with iterative design methodology and sell just like a regular startup company. The year will culminate with a big celebration event. We need minimum 6 students to hold this program

ESCAPADE 9



This is a Year around program for 9th graders where they will be introduced to object oriented programming and introduction to objects and classes, they will learn about Exception handling, creating custom types they will be able to optimally solve complex problems including search and sorting algorithm. This will be followed by students

doing three projects in the Fall. In Winter they will be learning about database concepts using SQL. They will also be introduced to Data Science. In Spring they will learn about entrepreneurship and they will work on building product that they will sell and the year will culminate with a big celebration event. We need minimum 6 students to hold this program.

ESCAPADE 10



This is a Year around program for 10th graders where they will be Learn about inheritance, polymorphism, use abstract classes and interfaces and learn to organize code following SOLID principles. This will be followed by students doing three projects in the Fall. In Winter they will be learning the concepts and fundamentals of Database and

will be introduced to SQL. They will also learn about the basic concepts of Data Science. In Spring they will learn about entrepreneurship and they will work on building product that they will sell and the year will culminate with a big celebration event. We need minimum 6 students to hold this program