



Ecole Internationale de Genève
International School of Geneva



STEM Centre^{IG}

“AUTOMATION REVOLUTION”

Programme 2018 – 2019

STEM Centre⁺

THINK, CREATE, INNOVATE!

STEM stands for “science, technology, engineering and mathematics”: it suggests an integrated approach to these domains whereby science and mathematics are learnt through interdisciplinary projects that use technology and the principles of engineering. Although interdisciplinary learning should not be restricted to these areas, STEM provides particularly useful opportunities for meaningful, innovative practice that reflects the increasingly integrated nature of real-world scientific research.”
(Guiding Principles for Learning, p.19)

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EDITORIAL

Depuis plusieurs années maintes vagues d'innovations technologiques se sont suivies avec l'effet d'élargir le spectre de la numérisation, la robotisation et l'automatisation. Les conséquences de la révolution numérique sont encore à venir. Demandons-nous qu'arrive-t-il lorsque l'ordinateur, le robot ou l'intelligence artificielle (IA) prend le volant, manipule le scalpel médical, devient professeur, devient chef cuisinier, fait son entrée dans l'univers du marketing, ou influence les modes de production et de consommation? La réponse est complexe et correspond à ce qui ressemble déjà notre société. Il est évident qu'il existe un perpétuel changement mené par l'automatisation qui impacte notre quotidien. Plusieurs secteurs comme le fitness, la santé, la sécurité, l'éducation et l'énergie bénéficient déjà de l'intelligence artificielle et de l'automatisation.

A la fois excitant et effrayant, c'est un fait que l'ère de l'automatisation prend de l'ampleur. Avec la science et la technologie elle entraîne une nouvelle révolution qui pourrait changer profondément le modèle socio-économique, l'organisation sociale, transformer l'industrie et la structure du marché du travail. Conséquemment, le thème pour l'année 2018-2019 «**AUTOMATION REVOLUTION**» au STEM Centre semble approprié, car nous avons le devoir de bien préparer les jeunes à faire face aux mutations variables qui les entourent et à vivre en harmonie avec les machines. Ainsi, d'importants thèmes, utiles pour cette nouvelle société, sont à aborder, par exemple : l'esprit, le corps, la conscience et les robots, les modèles computationnels pour la robotique sociale, l'éthique dans l'interaction humain-machine, la préservation de l'environnement, le développement durable, la culture et l'éducation. Les compétences et les savoirs à acquérir aujourd'hui se voient plus «*humains*» afin de s'équilibrer avec la machine, par exemple : l'agentivité, la collaboration, l'interaction avec les autres et le monde, la résolution de problème, la créativité, la résilience, la communication, l'authenticité et plus encore. Ainsi, peut-on assurer le futur de la nouvelle espèce *homo numericus* (ou citoyen digitalisé et numérisé conscientisé) ? J'espère que oui ! Sur ce, il me fait plaisir de vous présenter sur les pages qui suivent le **programme 2018-2019 du STEM Centre**.

Marie-France Labelle
STEM Centre Director

PRESENTATION

The STEM Centre was conceptualized by ABCP Architecture in collaboration with INITIAL, EPFL and the LGB STEM team. The three goals behind the design of the space were to facilitate cross-discipline communication and productive collaboration, to emphasize non-formal non-traditional teaching and learning (inverted classroom), and to encourage divergence in thinking and experimenting through hands-on authentic learning opportunities. It was also important to foster, in an extra-ordinary space, every student's learning journey (feel, ask, imagine, plan, create, discuss, reflect, share) and to develop competences such as collaboration, creativity, critical thinking and communication. After several years of planning, the STEM Centre was inaugurated at La Grande Boissière campus in September 2016.

The STEM Centre is an open space divided up in 4 major areas of approximately 102m²: the Idea Lab (idealization, collaboration and creativity space), the Innovation Lab (critical thinking, building and developing space), the Bot Lab (robotics, prototyping and testing space) and the Bubble (implementation, reflection and presentation space). The STEM Centre is primarily a place where students can expand their thinking by creating and solving open-ended problems involving robotics, electronics, programming and design. With bright open spaces to imagine new worlds, wall-to-wall whiteboards to brainstorm and hypothesize, and state-of-the-art equipment to explore and experiment, the STEM Centre creates the ideal atmosphere for students to dream, invent and keep up with advancements in an ever-changing digital world.

Combining different subjects, but also different year groups, we aim to merge various elements of the curriculum to encourage innovative ways of thinking and building. As a result, every day is a success as our students become ever more curious about the world around them, and come up with projects that captivate both their classmates and teachers. In close collaboration with the Centre des arts on the campus, we marry the digital arts, the sciences and mathematics bringing together the best possible conditions for learning, creating, experimenting, thinking, and innovating.

The fundamental aim of the STEM Centre is to host 21st century learning experiences that move away from traditional, theoretical, single-subject learning, and towards greater creativity through critical thinking, information literacy and interdisciplinary, project-based learning. To further this aim, we have developed projects with key academic institutions, such as the Ecole Polytechnique Fédérale de Lausanne (EPFL) and the Universities of Geneva (UNIGE), as well as leading organizations in the technology and engineering sectors, such as CERN, le CEDRE, Hands on Technology, Race for Water, and LEGO®. The STEM Centre, along with our partners, enable students to gain understanding of big ideas in science and mathematics, key STEM methodologies and core STEM skills.

The STEM Centre has become the headquarters for a number of pedagogical projects, events, enrichment courses, workshops and clubs. Since its opening, it has already enabled our students from 5 to 18 years old to gain new skills in areas such as programming, electronics, robotics, 3D printing and laser cutting, space exploration, digital mapping, product design and creation. STEM projects are not just about science, technology, engineering and mathematics; they are also about ethics, sustainability, creativity and problem solving, so, when in the STEM Centre "Think, Create, Innovate!"

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1. CALENDAR AT A GLANCE

CALENDAR AT A GLANCE

LEGEND:

Campus = for all year levels
Primary School = Years Pre-Reception to 4
Middle School = Years 5 to 8
Secondary School = Years 9 to 13
TBC = the exact date is to be confirmed

SEPTEMBER 2018

Mon 10 to Fri 14 September
STEM Discovery Week (Campus)
Event

Mon 10 September
ECA, Enrichment & CAS Activities Begin (Campus)
Important Date

Wed 19 September
Philosophy- STEM Presentation by Dr. Simon Scott, University of Birmingham (Sec School Y11-13)
Speaker

Thurs 27 September
Astronomie à l'école (Campus)
Curricular Project

TBC September - May
CERN S'Cool Lab (Sec School Y12-13)
Trip, Curricular Project

OCTOBER 2018

Sat 6 October
Finnish Woodworking Workshop (Mid & Sec Schools Y7-9)
Workshop

Mon 8 October
Ecole à la Ferme (Pri School Y3-4)
Trip, Curricular Project

Tue 9 to Tue 16 October
The Global Math Project Week – Exploding Dots (Campus)
Event

Week Mon 15 to Fri 19 October
Life Lab India Students Visit
Important Date

Mon 15 to Fri 19 October
Médiation artistique : Visite décalée archéologique (Prim School Y3-4)
Curricular Project

NOVEMBER 2018

Thurs 1 November
Lac Léman Beach Cleanup with Hammerdirt (Sec School, Campus)
Curricular Project

Tue 6 to Fri 23 November
Disruptive Innovation Festival 2017 (DIF) (Sec School Y11-13 & Parents)
Event

Mon 12 to Thurs 15 November
Médiation artistique: Cuisine(s) Lab (Campus)
Workshop

Wed 14 November
Diabetes and Obesity Day (Sec School Y12)
Event, Trip

Mon 21 to Fri 23 November
Journées d'information EPFL (Sec School Y11-13)
External Event

Fri 23 to Fri 29 November
Spoken Word Poetry & CinePoetry by Randy Kelly & Jamaal Jackson Rogers (Sec School Y9-10)
Workshops, Curricular Project

Fri 30 November
e-Sports (Sec School Y10-13)
Event, Competition

DECEMBER 2018

Mon 3 to Sun 9 December
Swiss Computer Science Education Week (Campus)
Event

Tue December or January (TBC)
SDG Space Solution Project Design Presentation by Thomas Maillart (Sec School)
Curricular Project

JANUARY 2019

Sat 12 January
First LEGO League "Into Orbit" Competition (Mid & Sec School Y8-10)
Event, Competition

Wed 16 January
Bricks 4 Kidz® - DUPLO® Workshop (Prim School Y1-2)
Workshop

Wed 23 January
Bricks 4 Kidz® - LEGO® Technic Workshop (Prim School Y3-4)
Workshop

FEBRUARY 2019

Mon 4 to Fri 15 February
Swiss Institute of Bioinformatics Presentations (Sec School Y11-12)
Speaker

Tue 5 February
Safer Internet Day (Campus)
Event

Mon 11 to Fri 15 February
Structures géantes KAPLA (Prim School)
Workshop, Curricular Project

MARCH 2019

Thurs 7 March
LGB STEAMPUNK Fashion Show (Campus)
Event

Thurs 14 March
World Pi Day (Campus)
Event

Mon 11 to Fri 15 March
Brain Awareness Week & Blue Brain Project
(Sec School Y11-12)
Event, Trip

Sat 16 to Sun 17 March
Maths ISMTF Senior Competition
(Sec School Y12-13)
Event, Competition

Sat 16 to Sun 17 March (TBC)
Swiss Young Physicists' Tournament (SYPT)
(Sec School Y10-12)
Event, Competition

Fri 29 March
e-Sports (Sec School)
Event, Competition

APRIL 2019

Week of 1 April
Race for Water Presentation
(Prim School)
Event, Curricular Project

Fri 5 to Sun 7 April
Maths ISMTF Middle School Competition
(Mid & Sec Schools Y8-10)
Event, Competition

Mon 8 to Sun 14 April
Open Geneva & Hackathons
(Sec School)
Event

Mon 8 to Fri 12 April
Animation Cosedec & le CEDRE:
Sensibilisation à la gestion des déchets
(Prim School FR)
Curricular Project

Tue 9 April
Registration opens for First® LEGO®
League (FLL)
Important Date

Mon 15 to Fri 26 April
International Cooperation India Teacher
Training Project
(Sec School Teachers)
Trip, Curricular Project

Thu 25 April (TBC)
International Girls in ICT Day
(Mid & Sec School Y8-9)
Event, Trip

April (TBC)
Beau Soleil SGIS Maths Competition
(Sec School Y9-11)
Event, Competition

MAY 2019

Sat 18 May
Woodworking for SDG Workshop
(Sec School & Parents)
Workshop

Thurs 23 May to Sun 2 June
Mapping Festival
(Sec School)
External Event, Workshops

TBC May
Maths ISMTF Junior Competition
(Sec School Y10-11)
Event, Competition

JUNE 2019

Thurs 23 May to Sun 2 June
Mapping Festival
(Mid & Sec Schools)
External Event, Workshops

Week Mon 3 to Fri 7 June
Ecole à la Ferme
(Pri School Y3-4)
Trip, Curricular Project

Week Mon 3 to Fri 7 June
Lac Léman Beach Cleanup with Hammerdirt
(Campus)
Event, Curricular Project

Wed 5 June
World Environment Day
(Campus)
Event

Tue 18 to Fri 21 June
LGB Annual STEM Centre Exhibition
(Campus)
Event

Sat 6 to Sun 7 April (TBC)
STEM Digital Photography
Starter Course with Viewfinder Center
(Sec School Y11-13 & Parents)
Workshop

Fri 21 June
International Women in Engineering Day
(Campus)
Event

Mon 24 to 27 June (TBC)
Euro Space Center Trip (Belgium)
(Sec School Y9)
Trip

2. EVENTS

Events in the STEM Centre are open primarily to Ecolint students and its community. They are generally free of charge.

Campus events are organized and lead by the STEM Centre Director or others such as campus Technology for Learning Coordinators, the LGB Tech Crew, Heads of Departments, teachers, students, and/or the parent-teacher association (PTA). Information on how to book the space(s) in the STEM Centre can be found in the "Rules and Regulation" section of this booklet. We reserve the right to add events to the current program if excellent opportunities arise.

GENERAL

STEM DISCOVERY WEEK

Campus

Mon 10 to Fri 14 September, 2018

15:00-17:15

Location: STEM Centre

The STEM Discovery Week gives students an idea of the opportunities that will be on offer in the STEM Centre for the academic year (i.e. ECA, workshops, enrichment clubs). Throughout the week, there will be hands-on activities, exhibits, and discussions/presentations with teachers and STEM leaders.

THE GLOBAL MATH PROJECT WEEK: EXPLODING DOTS

Campus

Tue 9 to Tue 16 October, 2018

Location: STEM Centre & Other

An engaging piece of mathematics is used for the duration of one full week to thrill and engage students, teachers, and adults. The Global Math Project (GMP) want to initiate a fundamental paradigm shift in how the world perceives and enjoys mathematics. The GMP transforms and declutters mathematics content to reveal its coherence, meaning, and joy. Therefore, throughout the week, various activities revolving around the Exploding Dots theme will be organized.

DISRUPTIVE INNOVATION FESTIVAL 2017 (DIF)

Sec School Y11-13

Tue 6 to Fri 23 November, 2018

Location: Online - www.thinkdif.co

The DIF is the world's largest online festival of ideas that asks: what if we could redesign everything? Examples of topics discussed by experts this year are: Cities in Transition, Future of Food, Materials & Design, People in the Economy, Reimagining Learning, Reinvigorating Business and Thinking in Systems. "The DIF is about learning... it's about dipping in and out of ideas, it's about broadening your mind." (Dame Ellen MacArthur).

DIABETES AND OBESITY OPEN DAY

Sec School Y12

Wed 14 November, 2018, 9:30-18:00

Location:

Centre Médical Universitaire (CMU),
University of Geneva



As part of the IB DP Biology course, the students will be able to attend the 15th Open House by the Faculty of Medicine (Faculty of Diabetes) to meet with researchers and clinicians who are conducting ongoing research on diabetes in Geneva. On this World Diabetes Day, a unique opportunity to understand the biological mechanisms leading to diabetes and how they are being studied will be possible through a thematic route with à la carte stations. A dozen stands, led by researchers, will allow our students to discover the various origins of diabetes, the role of the brain in food intake and the physiological function of insulin in the metabolism.

JOURNÉES D'INFORMATION EPFL

Sec Schools Y11-13

Mon 21 to Fri 23 November, 2018

Location:

EPFL – Swiss Tech Convention Center
Inscriptions dès septembre 2018

Chaque année, l'EPFL, via son service de promotion des études, et en collaboration avec ses facultés, se réjouit de vous accueillir nombreux sur son campus pour vous faire découvrir ses filières de formation, ainsi que sa communauté d'étudiants, d'enseignants et de chercheurs, les divers services dédiés aux nouveaux étudiants et les multiples associations chargées d'animer la vie sociale et culturelle du campus. Cet événement incontournable est une réelle immersion qui vous aidera à faire un choix réfléchi et éclairé pour votre avenir, et vous permettra d'apprécier le foisonnement scientifique et la diversité qui caractérise l'école.

E-SPORTS

Sec School

Fri 30 November, 2018, 18:00-20:30

Fri 29 March, 2019, 18:00-20:30

Location: STEM Centre

Registration opens one week prior



e-Sports have gained popularity over the years. Official competitions around the world attract millions of players and spectators. The Swiss e-Sports Federation (SeSF) is a member of the International e-Sports Federation (ieSF). In fact, Switzerland is one of the founding members. The ieSF was created in 2008 and is based in Korea.

The LGB Tech Crew organizes annual LGB e-Sports evenings during which individuals or teams compete in various video games (e.g. League of Legends, FIFA 18, Rocket League, Heartstone, etc...). Winners go home with trophies!

SWISS COMPUTER SCIENCE EDUCATION WEEK

Campus

Mon 3 to Sun 9 December, 2018

Location: STEM Centre & Other



During this annual international week of computing, thousands of students in Switzerland and around the world will be programming at all levels. The school will give students opportunities to engage in programming experiences in the world of creating games, applications, and hacking awareness. There will also be various organized ICT activities on all Ecolint's campuses linked with the Hour of Code.

This initiative began a few years ago in the United States with the aim of raising the awareness on the importance of computing. The CSEd Week is organized in memory of the birthday of the computer pioneer, Admiral Grace Murray Hopper (December 9, 1906).

SAFER INTERNET DAY

Campus

Tue 5 February, 2019, 8:15-17:00

Location: STEM Centre & Other



Over the years, Safer Internet Day (SID) has become a landmark event in the online safety calendar. Starting as an initiative of the EU SafeBorders project in 2004 and taken up by the Insafe network as one of its earliest actions in 2005, Safer Internet Day has grown beyond its traditional geographic zone and is now celebrated in more than 100 countries worldwide, and across all continents." (Safer Internet Day, 2016). From cyberbullying to social networking, the school will organize activities to raise awareness of emerging online issues and will help students and parents reflect on specific topics of current concerns.

LGB STEAMPUNK FASHION SHOW

Campus

Thurs March 7, 2019, 19:30-21:00

Location: Foyer Centre des arts



High fashion, beauty and engineering will be the focus of this year's STEAM Punk fashion show.

Steampunk is a design style inspired by Victorian-era industrialism and technology, especially powered by steam. The style first appeared in mainstream pop cultures in the late 2000s and currently is used in fashion, literature, film, tv, video games and DIY projects. Present in fictional works of Jules Verne, Mary Shelley and H.G. Wells in the late 1800s, the steampunk genre now emphasizes both the use of older technologies as well as retro-looking futuristic inventions.

Come and be amazed by our student fashion designers, engineers and models!

WORLD PI DAY

Campus

Thurs March 14, 2019, 8:15-16:30

Location: STEM Centre & Other



"Pi Day is a holiday which is celebrated on March 14th every year. This day was created to celebrate the mathematical constant π . It falls on 3/14 since three, one and four are the first three digits of PI. It is a holiday that has been celebrated large-scale since 1988 and has been celebrated by millions upon millions of math students and teachers since. While PI Day may have existed in one form or another, the first official large-scale celebration occurred on March 14th, 1988 at the San Francisco Exploratorium. This event was organized by physicist Larry Shaw. This first celebration featured participants marching around a large circle and consuming fruit pies. Over the years, the PI Day celebrations have become a little more complex and usually involve more activities." Therefore, on this day, students will have the chance to have fun with PI during various activities.

(taken from <http://www.holidayscalendar.com/event/pi-day/> accessed on July 7, 2019)

BRAIN AWARENESS WEEK

Sec School Y12

Mon 11 to Fri 15 March, 2019

Location: University of Geneva



During the Brain Awareness Week, the IB DP students will have the opportunity to challenge themselves through various activities, conferences, discussions and laboratory visits. The goal of this week's event, organized by the Geneva Neuroscience Center, is to inform the public about progress and benefits of brain research.

OPEN GENEVA (HACKATHONS)

Mid & Sec Schools

Mon 11 to Fri 15 March, 2019

Location: STEM Centre & Geneva (Various)



Open Geneva is an Open Innovation Festival for science, technology and society. It was established to promote open innovation with a spirit of knowledge sharing for the common good. In particular, Open Geneva aims to foster open innovation for the arts, science, technology, and for society in the Greater Geneva Area. Students and parents are welcome to participate in various Hackathons held around the city or in the STEM Centre. Special projects are presented at the Hackshow on the last day.

INTERNATIONAL GIRLS IN ICT DAY AT ITU

Mid & Sec Schools Y8-9

Thu 25 April, 2019 (TBC), 9:00-12:30

Location:

International Telecommunication Union (ITU), Geneva



International Girls in ICT Day, celebrated every year on the fourth Thursday of April, is an initiative to create a global environment that empowers and encourages girls and young women to consider careers in the growing field of information and communication technologies (ICTs). The format of the event varies from year to year, but the girls always get to engage in various workshops, discussion forums, and presentations.

MAPPING FESTIVAL

Mid & Sec Schools

Thurs 23 May to Sun 2 June, 2019

Location: Geneva (Various)



Every year, the Mapping Festival, dedicated to audio-visual art and digital culture, organizes workshops and exhibitions that merge creativity and technology. Students are invited to attend and reflect on aspects of the artistic digital world. The official program will be released in 2019.

WORLD ENVIRONMENT DAY

Campus

Wed 5 June, 2019, 8:15-17:00

Location: STEM Centre & Other



World Environment Day is held each year on June 5. It is one of the principal vehicles through which the United Nations (UN) stimulates worldwide awareness of the environment and enhances political attention and action. This year, LGB will take action and raise awareness on ways to improve the Earth's environment. Join us!

LGB ANNUAL STEM CENTRE EXHIBITION

Campus

**Opening on Tue 18 June, 2019,
18:30-20:30**

**(Student Presentations) to
Fri 21 June (Exhibition)**

Location: STEM Centre

The LGB Annual STEM Centre Exhibition is a showcase of curricular STEM projects designed and created by our students throughout the academic year. Come and be amazed by the skills the students from our Primary, Middle and Secondary Schools have learned such as 3D printing, laser-cutting, programming, modelling, light painting, problem-solving, collaborating, etc..., all in relation to real-life problems in the subjects of Science, Technology, Engineering and Mathematics.

INTERNATIONAL WOMEN IN ENGINEERING DAY

Campus

Fri 21 June, 2019, 8:15-16:30

Location: STEM Centre & Other

This annual day focuses attention on the amazing careers in engineering and technical roles for girls, and allows us to celebrate the achievements of outstanding women engineers. Join us for the celebration!

COMPETITIONS

FIRST LEGO LEAGUE

Mid & Sec Schools Y8-10

Sat Jan 12, 2019, 9:00-17:00

Location: Ecolint La Chat & Others

Registration open on
www.first-lego-league.org



FIRST® LEGO® League (FLL) challenges children and young people aged 9 to 16 years to develop the mindset of engineers and scientists. The participants of the robotics competition should build, test and program autonomous robots with LEGO® MINDSTORMS and solve missions in the Robot Game. In addition they are supposed to solve a real world problem in the research assignment. During the competition, the teams also learn social skills. This year's competition topic is "Into Orbit".

SWISS YOUNG PHYSICISTS TOURNAMENT

Sec School Y10-12

Sat 16 to Sun 17 March, 2019

Location: TBC

Registration opens in September 2018
or with the Physics Dept.

"The Swiss Young Physicists' Tournament (SYPT) is a competition, where physics enthusiasts from schools from anywhere in Switzerland participate. In so called Physics Fights three teams (each consisting of two to three students) compete against each other. They take turns presenting and defending their solution to a given problem, criticizing the solution of the opposing team and reviewing the performance of the two preceding teams. The performance of all three teams is assessed by a jury. The teams have to try to convince both their opponents as well as the jury of the quality of their scientific work and results and of the understanding of physics. The three rounds (on two days) are accompanied by a social program including opening ceremony, lunch, excursions, dinner and award ceremony after a final." (Lenggenhager, 2017).

In preparation for the tournament there will be a one week preparation course, the SYPT Physics Week. During this week, students work on their chosen problem while being supervised by SYPT-experienced coaches.

MATHS ISMTF SENIOR COMPETITION

Sec School Y12-13

Sat 16 to Sun 17 March, 2019

Location: American International School, Vienna
Registration through
the Maths department

MATHS ISMTF JUNIOR COMPETITION

Sec School Y10-11

TBC, 2019

Location: TBC

Registration through
the Maths department

MATHS ISMTF MIDDLE SCHOOL COMPETITION

Sec School Y8-10

Fri 5 to Sun 7 April, 2019

Location: Aloha College,
Spain

Registration through
the Maths department

"The ISMTF is a nonprofit foundation whose purpose is to provide support in the enrichment of teaching and learning of mathematics at international schools, nurture exchange of experiences among mathematics educators, and to help generate interest in and enthusiasm for mathematics among students of these schools." (ISMTF, 2017)

COLLÈGE ALPIN BEAU SOLEIL SGIS MATHS COMPETITION

Sec School Y9-11

April, 2019 (TBC)

Location: Collège Alpin Beau Soleil,
Villars-sur-Ollons, Switzerland

Registration through
the Maths Department

TRIPS

The STEM Centre will exclusively organize exciting and educational trips for the academic year 2018-2019. The Science and Mathematics departments are offering other trips, supported by the STEM Centre.

The registration for the following trips will be open to students from September 2018 or will be organized by the STEM Director and teachers accordingly.

ECOLE À LA FERME

Pri School Y3-4

September/October 2018 & June 2019

Location: Ferme des Verpillères,
Vandoeuvres,

Price: Free

www.schub.ch



Learn, Discover, Experiment. Thanks to "école à la ferme" providers across Switzerland, our students from the primary school will come into direct contact with life on the farm and get to know the origin of our food. L'école à la ferme is an apprenticeship that involves the five senses. By welcoming the children on their farms, peasant families offer an education which requires new faculties and resources. Touching, smelling, tasting and working together form the basis of a captivating and unforgettable education that has been a great success for 30 years. Over the past ten years, more than 250,000 students have benefited from the "école à la ferme" program and have permeated the many aspects of peasant life.

S'COOL LAB CERN

Sec School Y12-13

Open date

Location: CERN

Price: Free

https://scool.web.cern.ch/experiments

Le S'Cool LAB offre la possibilité aux élèves de manipuler pour eux-mêmes divers équipements en participant à des ateliers pratiques sur différents thèmes de la physique des particules lors de leurs visites du CERN. Certains ateliers (chambre à brouillard, rayons X, tube à électrons, supraconductivité, etc..) sont proposés.

PATEK PHILIPPE MUSEUM TRIP

Open to parents

Open date

Location:

Rue des Vieux-Grenadiers 7,
1205 Geneva

Price: 11 CHF (entry per student)

www.patekmuseum.com



Founded in 1839, the Patek Philippe Museum is home to the prestigious creations of the Geneva-based firm of master watchmakers. Students will discover how a passion for timepiece and the physics of time has brought together an extraordinary display of watches, a magic world of automata and portrait miniatures (art of enamelling) from the 16th to the 19th century. The students will also have a chance to explore the museum's library that is entirely dedicated to horology and its related subjects.

THE BLUE BRAIN PROJECT TRIP

Sec School Y11

Open date 11 to 15 March, 2019

Location: EPFL, Biotech Campus,
Batiment B1, Chemin des Mines 9,
1202 Geneva

Price: Free

Maximum number of students: 30

www.bluebrain.epfl.ch



The aim of the Blue Brain Project, a Swiss brain initiative founded and directed by Professor Henry Markram, is to build accurate, biologically detailed digital reconstructions and simulations of the rodent brain, and ultimately, the human brain. The supercomputer-based reconstructions and simulations built by Blue Brain offer a radically new approach for understanding the multilevel structure and function of the brain.

The registration for the following trips will be open to students from September 2018 or will be organized by the STEM Director and teachers accordingly.

EUROSPACE CENTER TRIP

Sec School Y9-10

24-27 June, 2019

Location: Rue Devant les Hêtres 1,
B-6890, Transinne, Belgium

Price: Approx. CHF 800
(includes transport, lodging,
food, space program)

Maximum number of students: 60

www.eurospacecenter.be

Trip TBC as the Euro Space Center is planning renovations in summer 2019.



We will prepare our students for take-off to the space station! They will be living and training like astronauts for a few days. The space mission simulator awaits them for a walk on the Moon or Mars; but first they will have to take the astronaut training course on the simulators. Science workshops are also planned so that they can build and launch their own rockets. Multimedia exhibitions as will teach them the history of space exploration and about daily life and work in space. Space adventurers, prepare for lift-off!

3. EXTRA- CURRICULAR ACTIVITIES AND WORKSHOPS

The extracurricular activities (ECA) and workshops are part of a campus wide program which offers students various opportunities to learn new skills through courses in STEM, in the arts, in sports or in other recreational domains. Professional instructors and coaches lead the activities. A fee is associated to each ECA or workshop. Note that ECA and workshops cater to specific year levels and require generally a minimum of 5 students to run. Registrations for ECA and workshop activities are done through the "MyEcolint" ECA school portal.

ECA GENERAL

PRIMARY SCHOOL

CODING AND ROBOTICS

Years 3-4

Course Instructor: Christine Paul & Erik van Nielen

Timing: 10 September 2018 to 14 June 2019, Weekly for 1h30m Mondays 15:00 -16:30

Language of Instruction: English / French

Location: STEM Centre & Primary School

Maximum Number of Students: 10

Price: 820 CHF

In this course, students will learn practical and applied computer skills as well as robotics. Using various software packages, students will be engaged in fun activities to create special characters, images and logos; then learn how to incorporate them in basic animation or movie. Some sessions will be devoted to programming various types of robots such as Sphero or Ozobot.



LEARN BUILD PLAY LEGO®

Years 2-4

Course Instructor: Vanessa Vidal & other

Timing: 10 September 2018 to 14 June 2019, Weekly for 1h30m Wednesdays 12:00-13:30

Language of Instruction: English / French

Location: STEM Centre

Maximum Number of Students: 12

Price: 580 CHF

Bricks 4 Kidz® after-school classes build on the universal popularity of LEGO® Bricks to deliver a high quality of educational play. Children construct a new model each week based on exciting themes ; A program that integrates science, technology, engineering or mathematics.



PRIMARY SCHOOL AND MIDDLE SCHOOLS

“LES PETITS BRICOLOS” WOOD ART CRAFT

Years 3-8

Course Instructor: Maluen Prunier

Timing: 10 September 2018 to 14 June 2019, Weekly for 1h30m Mondays 15:45-17:15 (Years 5-8) Tuesdays 15:00 -16:30 (Years 3-4) or Wednesdays 12:00-13:30 (Years 3-4)

Language of Instruction:

English / French

Location: STEM Centre

Maximum Number of Students: 10

Price: 820 CHF (incl. material)

Come to the STEM Centre and learn how to make your own constructions in wood. You will be using your creativity by sketching and drawing your ideas onto paper before sawing, drilling, screwing, sanding and assembling pieces of wood together – to construct an item that is both ecological and durable! The children are also taught the benefits of teamwork and collaboration, as well as the need to respect some simple rules. To maximise the security of the children, only hand tools are used in this workshop.



3D PRINT: BOOST YOUR CREATIVITY IN ART & DESIGN

Years 3-6

Course Instructor: Khailid Ali

Timing: 10 September 2018 to 14 June 2019, Weekly for 1h30m Tuesdays 15:00 -16:30 (Years 3-4) Tuesdays 15:45-17:15 (Years 5-6)

Language of Instruction: English / French

Location: STEM Centre

Maximum Number of Students: 15

Price: 690 CHF (incl. material)

Une expérience unique pour vos enfants: apprendre, modéliser, imprimer en 3D. Apprendre le dessin 3D sur ordinateur, jouer au tangram, construire avec la pâte à modeler et les aimants en 3Dimensions. Travailler le jeu d'équipe et comment planifier un projet. Des activités ludiques avec les plots. Projet pratique : créer son porte-clé, son bracelet et même son jouet. Puis terminer par colorier leurs objets imprimés. Des activités riches en créativité et en défis.



MIDDLE SCHOOL

CRAFTS DESIGN & SEWING

Years 7-8

Course Instructor: Sonia Castejon

Timing: 10 September 2018 to 14 June 2019, Weekly for 2h00m Mondays 15:45-17:45

Language of Instruction: English

Location: STEM Centre

Maximum Number of Students: 10

Price: 750 CHF (incl. material)

Students will be engaged in fun fabrics projects while learning the basics of hand and machine sewing. Projects could include tablet covers, bags, cushions, baskets, or whatever the students' imagination will take them.



JUNIOR STEP COMPUTER ACADEMY

Years 7-8

Course Instructor: Moez Maâmer, David Breed, Vitalii Varbanets

Timing: 10 September 2018 to 14 June 2019, Weekly for 1h30m Thursdays 15:45-17:15

Language of Instruction: English / French

Location: STEM Centre

Maximum Number of Students: 14

Price: 700 CHF (incl. material)

IT STEP Academy is ready to take you into the business of producing video games. Whether your child is a graphic artist, a lead creative or marketing director, Game Design 4 Good will test their skills in all areas, bringing the entire class to prototype an MMO game about a small band of adventurers who must save their rainforest from disaster. See how today's games are made, from storyboard to storytelling, learn the formulas for turn-based combat and in-game economies, and most important of all – discover what keeps players playing!

Game Design 4 Good is also a fun way to learn about the Sustainable Development Goals (SDGs) as students explore a game universe addressing sustainable living, gender equality, forest conservation and corporate governance. At the end of 30 lessons, students will pitch their work to a jury of games industry experts who will decide if the prototype is ready to go to market. During completion of this course, students and parents will benefit from IT STEP's MyStat reporting system, which tracks student performance on a weekly basis. Students will also receive awards that are redeemable in the IT STEP Online Store, and graduate with a completion certificate.



SECONDARY SCHOOL

DIY DRONES

Years 9-12

Course Instructor: Maxime Miraillet

Timing: 10 September 2018
to 14 June 2019, Weekly for 1h30m
Fridays 15:45-17:15

Language of Instruction:
English / French

Location: STEM Centre

Maximum Number of Students: 8

Price: 950 CHF (incl. material)

Learn how to build, program and fly your own drone! Throughout the course, students will learn how drones are efficiently used in the world today, how to build a drone from a construction kit, how to 3D print special parts needed for customization, how to program, and how to fly the drone using remote controls, flight planning strategies as well as visualization.



DJING LIVE

Years 9-12

Course Instructor: Juan Aguiar or other

Timing: 10 September 2018
to 14 June 2019, Weekly for 1h30m
Wednesdays 16:30-18:00

Language of Instruction:
English / French

Location: STEM Centre

Maximum Number of Students: 10

Price: 850 CHF (incl. material)

Le cours de Djing Live est destiné à tout le monde, sans pré-requis. DJ Rouni offrira aux élèves son approche du Djing tirée de son parcours personnel, passé d'autodidacte, sans notions de musique, à un professionnel de la musique, jusqu'à la création de sa société. Ce cours de formation est axé tout d'abord sur la pratique et la technique numérique, afin que les élèves prennent avant tout du plaisir à créer, puis amener des notions théoriques (ex. histoire, formes de Djing, visions professionnelles). Il y aura une organisation de concours et d'événements afin que les élèves se produisent sur scène et vivent une expérience hors du commun.



FASHION DESIGN & SEWING

Years 9-12

Course Instructor: Sonia Castejon

Timing: 10 September 2018
to 14 June 2019, Weekly for 2h00m
Thursdays 15:45-17:15

Language of Instruction:
English

Location: STEM Centre

Maximum Number of Students: 10

Price: 750 CHF

Students will be engaged in fun fabrics, theatre production and fashion show projects while learning the basics of hand and machine sewing. Products, focused on fashion design, could include connected clothes, various props, hats, bags, or whatever the students' imagination will innovate.



WOODWORKING

Years 9-12

Course Instructor: Manuel Prunier

Timing: 10 September 2018
to 14 June 2019, Weekly for 1h30m
Tuesdays 16:30-18:00

Language of Instruction:
English / French

Location: STEM Centre

Maximum Number of Students: 8

Price: 820 CHF (incl. material)

Lors de ce cours les élèves apprendront à construire des objets et meubles en bois. En plus de développer la dextérité ou même de graver tes œuvres, les élèves découvriront qu'ils/elles sont capables de beaucoup avec quelques outils et un peu de matériel.



WORKSHOPS IN COLLABORATION WITH BRICKS 4 KIDZ

PRIMARY SCHOOL (YEARS 1-2)



BRICKS 4 KIDZ® - DUPLO® WORKSHOP

Years 1-2

Course Instructor: Vanessa Vidal or other

Timing: Wednesday 16 January 2019, 13:00 -16:00 (total of 3 hours)

Language of Instruction:
English / French

Location: STEM Centre

Maximum Number of Students: 14

Price: 60 CHF (incl. material)

Bricks 4 Kidz® DUPLO® workshops use DUPLO® bricks to deliver a high quality of educational play. During this workshop children's eyes will light up as they dig into a pile of brightly-coloured DUPLO® bricks! Through engaging and interactive discussion, children will learn more about their environment and the world around them. They will build models based on a variety of themes including everything from animals and insects, to transport and the human body! All our models are exclusive and designed by Bricks 4 Kidz® model designers. At the end of the workshop, students will take home a worksheet summarizing what they have learnt and what models they have built.

The objectives for the course are to learn and practice the following: letter recognition, patterning, learning colours, counting, fine and gross-motor skills, position and ordering, vocabulary, comparing and contrasting.

PRIMARY SCHOOL (YEARS 3-4)



BRICKS 4 KIDZ® - DUPLO® WORKSHOP

Years 3-4

Course Instructor: Vanessa Vidal or other

Timing: Wednesday 23 January 2019, 13:00 -16:00 (total of 3 hours)

Language of Instruction:
English / French

Location: STEM Centre

Maximum Number of Students: 14

Price: 60 CHF (incl. material)

Bricks 4 Kidz® - LEGO® Technic workshops use LEGO® bricks to deliver a high quality of educational play. From forces of Nature to Life sciences, from Energy to Space, we will lead lively discussions whilst exploring science, technology, engineering and mathematics (S.T.E.M.) concepts. Working in pairs, children will experience the hands-on fun of model building, from concept to completion. All our models are exclusive and designed by Bricks 4 Kidz® model designers. At the end of the workshop, students will take home a worksheet summarizing what they have learnt and what models they have built.

The objectives for the course are to: reinforce S.T.E.M. concepts, help develop an appreciation for how things work, build self-confidence and problem solving skills, foster teamwork, trigger children's lively imaginations, provide a safe, enriching place to create and play.

WORKSHOPS IN COLLABORATION WITH KNOCK-ON-WOOD

MIDDLE & SECONDARY SCHOOLS (YEARS 7-12) (PUBLIC)

BASIC FINNISH WOODWORKING WORKSHOP

Years 7-9 (parents welcome)

Course Instructor: Zsuzsanna Varga

Timing: Saturday, 6 October, 2018, 13:30 -16:30 (3 hours)

Language of Instruction: English, French, Spanish, German, Finnish, Hungarian

Location: STEM Centre

Maximum Number of Students: 20

Price: 60 CHF (includes material)

In this workshop, participants will get a taste of basic manual work and connect it back to subjects they do at school. While gaining confidence in handling tools or DIY machines (under supervision), the course allows participants to look at things from a different perspective by putting design thinking and problem solving into practice. A truly grounding and satisfying experience based on the world famous Finnish education system.

The objectives of the course are to: getting hands-on experience in woodworking, develop manual skills and gain confidence in handling tools.

WOODWORKING FOR SDG WORKSHOP

Years 7-12 (parents welcome)

Course Instructor: Zsuzsanna Varga

Timing: Saturday, 18 May, 2019, 9:30-16:30 (6 hours)

Language of Instruction: English, French, Spanish, German, Finnish, Hungarian

Location: STEM Centre & Other

Maximum Number of Students: 20

Price: 120 CHF/hour

During this one-day activity, students (and parents) will get to experience woodworking in a sustainable manner using recycled material (Euro pallets) that would otherwise end up in the dechetteries. Participants will build sustainable furniture. The attitude of the workshop corresponds with SDG 11; Sustainable Cities and Communities and 12; Responsible Consumption and Production. The objectives of the course are to allow participants to use tools and machines under close supervision, foster teamwork and inter-generational collaboration while using design thinking in woodworking.

WORKSHOPS IN COLLABORATION WITH VIEWFINDER CENTER

SECONDARY SCHOOL (YEARS 11-13) & PARENTS (PUBLIC)



DIGITAL PHOTOGRAPHY STARTER COURSE

Years 11-13 & Parents

Course Instructor:

Matt Anderson and Dagmar Anderson

Timing: Saturday-Sunday, 3-4 March, 2018, 9:00-16:00 (1hr lunch) (6 hours per day for a total of 12 hours)

Language of Instruction: English

Location: STEM Centre & Geneva

Maximum Number of Students: 10

Price: 800 CHF (includes all needed material)

Matt Anderson is a former photojournalist and acquired a diverse photography skills while photographing for two daily newspapers and the Associated Press in the USA. Equal parts photographer and teacher, Matt is a qualified educator, having done a masters-in-teaching program in the USA before moving to Switzerland in 2008. Matt takes pleasure in helping other photographers refine their skills and achieve their own creative goals.

Dagmar Anderson is Viewfinder Center's registrar and assistant instructor. She can be found working away diligently on registrations, student inquiries and trip planning behind the scenes. When Dagmar isn't busy in the office, she can be found in the co-pilot seat on Viewfinder's foreign workshops and day-trips in Switzerland. Her strong attention to detail and her long career as a nurse make her a valuable teammate both in the office and in the field.

Course Description and Objectives:

Viewfinder's popular two to three-day Digital Photography 1-2-3 Course is perfect for those who have recently started using a dSLR or Mirrorless-type camera or who have been using their camera for a while, but struggle to get consistent results. If you're ready to leave automatic mode behind, this is the course for you. Registered students benefit from a free online video version of Digital Photography 1-2-3 at the end of the course.

Our approach is to offer friendly, hands-on learning that familiarizes you with essential camera functions and the contexts in which to use them. Think of Digital Photography 1-2-3 as a foundation of knowledge which you can build upon as you continue exploring photography. This course is Viewfinder's most popular program and if you're new to our community – this is a great place to jump in, learn new skills and get inspired!



4. ENRICHMENT CLUBS

The enrichment clubs are part of our Y9-11 “Build your Character” and our Y12-13 IB DP CAS (Creativity, Activity, Service) programs. These clubs are lead by our Ecolint specialist teachers or students and are free. Timings for these clubs will be published on September 11th 2017 during the STEM Discovery Week. Registrations for these clubs are done through ManageBac “Groups”.

GENERAL, SCIENCE & ENVIRONMENT

SCRATCH PROGRAMMING

Years 5-6

Lead by: TBC

Timing: TBC

Location: STEM Centre

Students will learn basic SCRATCH programming while creating games and engaging in other fun activities.



ENGINEERING COMPETITION CLUB

Years 11-13

Lead by: CAS Students

Supervisor: Marie-France Labelle
(marie-france.labelle@ecolint.ch)

Timing: Tuesdays, 16:30-17:30

Location: STEM Centre

Students will be working on hands-on engineering projects such as machines linked to specific themes and real life scenarios, thus developing skills in leadership, critical thinking, collaboration and time management. Because the tasks we will try to complete may require some advanced knowledge in physics, mathematics and chemistry, this activity is mostly recommended for Y12. A commitment as well as regular attendance is expected to work consistently and efficiently.



INTRODUCTION TO JAVA OR PYTHON PROGRAMMING

Years 9-12

Lead by: Emre Onal
(emre.onal@learning.ecolint.ch)

Supervisor: Marie-France Labelle
(marie-france.labelle@ecolint.ch)

Timing: Wednesdays, 16:30-17:30

Location: STEM Centre

For aspiring programmers or anyone wanting to program a game. You will learn the basics of the most popular programming language today: Java or Python. After learning the necessary tools, you will transition to creating 2D video games such as Battleships and Snake. Keep in mind that you will gain a lot of knowledge out of this course, but it will require effort and persistence.



LAC LÉMAN CLEANUP PROJECT TEAM (IN COLLABORATION WITH HAMMERDIRT)

Campus

Lead by /Supervisor:
Marie-France Labelle
(marie-france.labelle@ecolint.ch)

Timing: Nov 1 & Open

Location: STEM Centre

Come and join the movement to help clean up our beloved Lac Léman. You will be doing a beach clean-up, sort and analyse data as well as apply your knowledge to help save a valuable resource, water. You will also be able to take a lead on some research initiatives.



LGB TECH CREW

Years 9-12

Lead by: TBC

Supervisor: Marie-France Labelle
(marie-france.labelle@ecolint.ch)

Timing: Open

Location: STEM Centre

The LGB Tech Crew is formed of members that have expertise in ICT and who are willing to share their digital knowledge with peers and teachers. The competences needed by members of this group are: ability to create, communicate information effectively, evaluate and use digital tools, plan & manage activities to develop digital solutions, troubleshoot systems and applications, and organize events. Follow us on: www.lgbtechcrew.wordpress.com



LGB STEAMPUNK FASHION SHOW ORGANIZATION TEAM

Years 11-13

Lead by /Supervisor:

Marie-France Labelle
(marie-france.labelle@ecolint.ch)

Timing: Open

Location: STEM Centre

The LGB Wearables Fashion Show will be the community event of the year for the STEM Centre. As such, we are seeking the help of the community (students, teachers, parents) to form the teams that will help with the planning, the logistics and the execution of the show! If you are interested in entrepreneurship, marketing, event planning, fashion, photography, sewing, electronics, or other, please join us to ensure the success of this extra-ordinary event.



MARINE CLUB

Years 9-12

Lead by: Cara Burke

Supervisor: Marie-France Labelle
(marie-france.labelle@ecolint.ch)

Timing: Mondays, 10:30

Location: STEM Centre

Members of the marine club are passionate about artistically promoting awareness about animals living on our planet. This way, biology meets art through creative writing, plays, cartooning, knitting, etc... Join us to help give a voice to bizarre yet interesting animals!



MEDICAL SOCIETY

Years 11-13

Lead by: CAS Students

Supervisor: Marie-France Labelle
(marie-france.labelle@ecolint.ch)

Timing: Fridays, 10:30

Location: STEM Centre

Do you love science? Do you imagine studying something medical at university? Then join the LGB Medical Society! We will be meeting once a week in order to organize fundraisers, discuss medical topics, prepare for university tests like the BMAT or UKAT, listen to guest speakers and much more!



PHOTO TECH CLUB

Years 9-12

Lead by / Supervisor:

Olivier Coupy (olivier.coupy@ecolint.ch)

Timing: Tuesdays, 15:00-16:30

Location: SA 103 & STEM Centre



Le club ambitionne de vous apprendre à faire de la photographie et non pas de simples photos. Bien évidemment, cette discipline se base sur la prise de clichés avec un appareil photo. Celui-ci peut être un compact, un téléphone, un bridge, un hybride ou un reflex numérique à objectifs interchangeable. Pour bénéficier d'une galerie bien réussie, certains points sont à considérer. La façon de s'y prendre doit dépendre, en grande partie, des types d'images à capturer. Les méthodes à appliquer pour les scènes extérieures se distinguent de celles pour les prises à l'intérieur d'un local quelconque ou d'un studio. Il en est même pour les diapositives avec ou sans présence humaine. Mêmes conditions avec les photos sous

éclairage naturel ou artificiel. Le meilleur moyen de maîtriser toutes les techniques de ce domaine s'avère de passer une formation en photographie que nous développerons en trois points:

1. Bases physiques de l'image : Pour étudier la technologie de l'imagerie numérique, voici les concepts que vous allez apprendre : effet photoélectrique, capteurs CCD, technologies de transferts, résolution optique, critère de Rayleigh, résolution électronique, et mémoires. Le côté optique sera également étudié: lentilles, réfraction, objectifs, focales.

2. Séances de prises de vues représenterons la plus grande partie de nos activités pour développer le côté image: choix d'un APN, d'une focale en fonction du sujet, les différents programmes proposés, le mode manuel intégral, formats, composition, profondeur de champ, portraits/paysages, images sous-marines, retouches, publication, tirages, web, et droits.

3. En relation avec le STEM Centre, nous pourrons également apprendre à traiter les images numériques sur écran (photoshop, lightview, etc...) lorsque le temps ne permettra pas de sortir photographier et lors d'évènements ponctuels organisés sur place.

WHITE HAT HACKING CLUB

Years 10-11

Lead by: James Mullen

(james.mullen@learning.ecolint.ch)

Supervisor: Marie-France Labelle

(marie-france.labelle@ecolint.ch)

Timing: Semester 2

Location: STEM Centre

White hat hacking is the process of finding security flaws in computer systems to improve security. In this club/course, students will learn all about computer security systems, but will also learn about the laws and ethics of cyber security.



FILM CLUB

Years 10-13

Lead by: Sofia Hernandez

(sofia.hernandez@learning.ecolint.ch)

Supervisor: Marie-France Labelle

(marie-france.labelle@ecolint.ch)

Timing: Tuesdays or Thursdays, 16:30

Location: STEM Centre

The club's main objective is to pay homage to the seventh art by first discussing filmmakers, movies and techniques. Following this, as a team, participants will be making short films inspired by such movies throughout the year. The club will focus on creating a community around movies and on the process of making them as a way of telling stories. The members will all be able to bring their ideas, skills, and interests to the table, as filmmaking is a collaborative process.



ROBOTICS

ROBOTICS

Years 9-10

Lead by / Supervisor:

Maxime Miraillet
(maxime.miraillet@ecolint.ch)

Timing: Wednesdays 15:45-16:30

Location: STEM Centre

Learn how to build, program and use various types of robots such as EZ-Robots. This will enhance your logical and creative thinking!



FIRST LEGO LEAGUE WITH EV3 MINDSTORMS

Years 9-10

Led by: Junseo Um

(junseo.um@learning.ecolint.ch)

Supervisor/coach: Marie-France Labelle

(marie-france.labelle@ecolint.ch)

Timing: Thursdays, 16:00-17:30

Location: STEM Centre

Gather your crew and get ready to explore, challenge and innovate in the demanding and inspiring expanse we call space! The 2018/19 FIRST® LEGO® League Season requires you to work together to break out of your earthly constraints. Do you have what it takes to go INTO ORBIT? FIRST® LEGO® League challenges students to think like scientists and engineers. During the 2018/19 INTO ORBIT Season, teams will choose and solve a real-world problem in the Project. They will also build, test, and program an autonomous robot using LEGO®MINDSTORMS technology to solve a set of missions in the Robot Game. Throughout their experience, teams will operate under core values celebrating discovery, teamwork, and Gracious Professionalism®.



MISSION TO MARS THYMIO ROBOTICS TEAM

Years 9

Lead by / Supervisor:

Louise Machell
(annalouise.machell@ecolint.ch)

Timing: Tuesdays 15:15-16:15

Location: STEM Centre

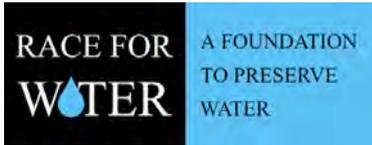
Students will use programming skills, critical thinking and collaboration skills to save Mars using Thymio II robots. The final event will be held at EPFL but robots will be controlled from LGB to simulate the reality of a Mission to Mars.



5. EDUCATIONAL STEM CAMPUS PROJECTS

Educational projects are experiential teaching and learning opportunities we offer our students from all three schools on the LGB campus. By linking various school programs and curricular topics to real-life initiatives in the Geneva area, we aim to help create awareness and find solutions to global issues while using STEM skills. Thus, it is our pleasure to work collaboratively with external organisations who are fully active in trying to save our planet's resources and who are ground-breaking in the fields of STEM.

RACE FOR WATER PROJECT



The Race for Water Foundation is an organisation dedicated to the preservation of the ocean. This indispensable resource is under massive threat from plastic pollution and must be protected. In 2015, the Swiss entrepreneur Marco Simeoni decided to launch a scientific and environmental expedition, the Race for Water Odyssey, to make the first one-swoop global assessment of our ocean's plastic pollution. After 9 months around the world, the conclusions were clear: "plastic islands" do not exist. In the middle of the oceans there is a "soup" of microplastics whose flow must be stopped on the ground. In order to propose concrete solutions to preserve the oceans, Race for Water has returned at sea in 2017 for a new Odyssey of 5 years.

Our missions:

- To promote innovative solutions capable of transforming plastic waste into energy resources
- To accelerate the clean energy transition by improving the mixed solar-hydrogen-kite power of our ambassador vessel
- To contribute to science by hosting international teams of researchers
- To raise awareness among decision-makers, the general public and younger generations about the urgent need to conserve the oceans.

La Grande Boissière students will have the chance to work in collaboration with Race for Water to help preserve water, the most precious resource on the planet.

The pedagogical project, interwoven with the curriculum, will be comprised of many opportunities open to all students on campus:

- Primary School: A **workshop** led by the Race for Water in **April**. Race for Water will present interactively the implications of water pollution and will share some solutions to help solve this global issue.
- Secondary School: **Scientific hands-on sessions** with innovative engineers from the Race for Water Odyssey team. They will elaborate and discuss with students the scientific and mathematical findings and conclusions of the official Race for Water Odyssey report. Students will learn about the revolutionary solar hydrogen technology on Race for Water vessel.
- LGB Community: We hope to welcome members of the Race for Water Odyssey team to share expedition scientific stories during a special conference on renewable energy.
- LGB Community: Our students, big and small, will be able to **Run for Water** to physically challenge themselves OR be **Water Guardians** who commit to one or more eco-gestures to help save water.

HAMMERDIRT LAC LÉMAN CLEANUP PROJECT



"Litter on land enters our watershed, some of it gets washed out to the ocean the rest stays in our rivers and lakes entering our food chain and killing our natural environment. When we integrate data collection with pollution mitigation we can leave the environment clean today and provide data for the solutions of the future." (Hammerdirt, 2016)

La Grande Boissière students will have the chance to work in collaboration with Hammerdirt to help create awareness of our need to protect the environment and to learn about the use of scientific data for community action. The main goal will be to "increase the value of citizen's observations and actions when conducting volunteer litter removal operations." (Erismann)

The pedagogical project will be comprised of two major components which will be interwoven with the curriculum and other programs such as CAS.

1. **Litter surveillance and Data Management:** includes beach clean-ups (week of October 2) and data collection, web scraping, data integrations (scripts for comparable data), reporting to local officials, web app design
2. **Development of IOT monitor for water quality:** includes prototyping, building and programming.

With this project, we will also be contributing to Hackarium and Biodesign.cc scientific projects.

SUSTAINABILITY PROJECT



GENEVA SDG SOLUTION SPACE PROJECT

The Geneva SDG Solution Space is a new maker space lab where students, researchers, humanitarian workers and UN experts gather to provide practical answers to the challenges of sustainable development. The focus is on the seventeen Sustainable Development Goals (SDG) set by the United Nations in 2015. The facility is housed in the Biotech Innovation Park Campus (UNIGE).

From September, enthusiastic LGB Secondary School students will be able to generate and present their ideas for solutions to the SDG Solution Space committee who will select up to 10 STEM innovators. With the help of international experts in STEM (and in collaboration with Tsinghua university in China), the chosen students will learn and use state-of-the-art digital technology in the lab to help them develop prototypes, validate projects and, more broadly, test the suitability of their ideas. The final products will be presented at the University of Geneva, the STEM Centre and possibly at the Geneva Open Hackathons or Hackshow.

ECOLE À LA FERME - LIFE CYCLES

“L'école à la ferme” is a place for creative and practical sustainable education, teamwork and successful collaboration. The farm is accessible and adapted to all children which places the reality of life at the center of its activities, mostly the importance of the links between man, nature and the environment. On the farm, all school subjects are put into practice: french, calculus, natural sciences, geography, botany, chemistry ... And the students have all their senses awake: touch, smell, sight, hearing and taste, not to mention the mind and the heart. Objectives and themes for the visit are set by the teachers with the support of the family on the farm. The evaluation of the objectives after the visit is part of the program because “l'école à la ferme” also means: mutual learning, exchanges, experiences and discoveries.students.

SEED LIBRARY

(IN COLLABORATION WITH THE SECONDARY SCHOOL LIBRARY)

A Seed Library is a depository in which members of Ecolint Community can share seeds from plants grown without the use of any pesticides or synthetic chemical fertilizers for their garden.

Our goal is to contribute to the preservation of non-marketed varieties of plants and to encourage gardening. In doing so, the Seed Library will also foster a culture of exchange within the community and give opportunities to initiate important discussions on biodiversity, fight for food and intellectual property.

HYDROPONIC GARDEN

ESP students will use seeds from the seed library to harvest herbs, lettuce and other in the STEM Centre's hydroponic garden; where growing conditions are controlled electronically.



SENSIBILISATION À LA GESTION DES DÉCHETS (INCLUANT EN MILIEU AQUATIQUE)

(EN COLLABORATION AVEC COSEDEC ET LE CÈDRE)

«Sensibilisation à la gestion des déchets et à la consommation responsable COSEDEC invite les élèves à adopter une position responsable vis-à-vis de leurs déchets. Ce vaste thème permet aux enseignants et aux animateurs d'ouvrir la réflexion sur de nombreuses questions: enjeux du recyclage, préservation des ressources naturelles, pollution, réflexion à l'achat. L'approche proposée se situe dans une perspective positive de changement qui permet de comprendre l'impact de son comportement sur l'environnement et la société.» (Cosedec)

En discutant la problématique des pollutions des eaux, plus particulièrement les effets de la pollution pétrolières en milieu marin de type Erika, Prestige ou Amoco Cadiz, les élèves auront la chance d'utiliser les ressources du CEDRE, soit des expériences proposées (ex. la marée noire), son catalogue de ressources en ligne, ou ses orateurs.

ASTRONOMIE À L'ÉCOLE

(EN COLLABORATION AVEC RANDONNÉES & ASTRONOMIE)

L'observatoire vient à l'école ! Les élèves auront la chance d'apprendre plusieurs notions liées à l'astronomie. Un planétarium 3D itinérant ou numérique est l'élément principal des animations pédagogiques mais plusieurs autres activités sont proposées. Les élèves de l'école primaire feront la découverte de l'Univers, tandis que pour les élèves des écoles moyenne et secondaire, l'observation et l'expérimentation en «réel» vont prendre une place importante. Ainsi, l'astronomie avec tous ses concepts devient un moyen d'explorer des méthodes qui pourront s'appliquer aux d'autres disciplines.

BUILDING A HUMANOID PROJECT

This project started in January 2017 by our ESP students across campus. Our students are collaboratively building a life-size humanoid. They are learning and applying various STEM skills and scientific concepts. Join us in the STEM Centre to help build a body part!

MEDIATIONS ARTISTIQUES

(EN COLLABORATION AVEC FLORIANNE FACCHINI & CIE ET HUM PRODUCTION)

Cette année, deux médiations artistiques seront proposés pour le campus.

1. CUISINE(S) LAB - CONTE & CUISINE: Laboratoire urbain d'exploration sensible des territoires humains et culinaires. Sujets : le conte traditionnel, les mythes, le récit, la transmission, l'éducation alimentaire...
2. VISITE DECALEE ARCHEOLOGIQUE : Spectacle créé spécialement pour les unités en géographie (spécialement sur celui de la Suisse et l'Égypte Ancienne à l'école primaire). Sujets: archéologie suisse, site du Veyrier, mythes et contes archéologiques, exploration, voyages...

STRUCTURES GÉANTES KAPLAS

Les élèves de l'école primaire assisteront à des ateliers ludiques de constructions géantes avec des planchettes de bois KAPLA. Le but des sessions encadrées par des animateurs experts en KAPLA est de repousser les limites de la construction et de l'architecture par le jeu coopératif, ludique et pédagogique.

INTERNATIONAL COOPERATION: INDIA STEM TEACHER TRAINING PROJECT

(IN COLLABORATION WITH LIFE LAB FOUNDATION)

While pedagogical innovations are fit to improve the quality of urban education in India, rural learners and their education, remain largely neglected. Because of limited professional development for teachers, they are often unequipped to manage the rapidly changing environment of education.

The proposed Teacher Training Program will be an ongoing collaborative effort by LGB (STEM Centre) and Life Lab Foundation to train high-school science teachers in India, especially from under-resourced schools. The training modules will focus on STEAM project-based, inquiry-based, experiential learning and interdisciplinary teaching and learning.

The first initiative will be a week-long, certified training program in April 2019 (tentative) for up to 25 qualified teachers, offered by Ecolint specialist teachers, on topics and objectives designed by the project lead, the STEM Director, Ms. Marie-France Labelle.



SPEAKERS

We hope to welcome the following speakers this academic year:

- James Grimes, Mathematician
- Peter Charaf, Race for Water Photographer and Film Director
- Roger Erismann, Founder of Hammerdirt
- Randy Kelly & Jamaal Jackson Rogers, Word Poetry and CinePoetry
- Marie-Claude Blatter, Swiss Bioinformatics
- CERN, EPFL, UNIGE and other institutions engineers and scientists as well as admissions officers from various well-known universities such as Oxford University.
 - Dr. Jevita Potheegadoo, EPFL, euroscience
 - Dr. Simon Scott, University of Birmingham, Philosophy

Due to their very busy schedules and international travel, we cannot guarantee their visit but check the weekly newsletters for all upcoming STEM Centre events. It is also possible that the STEM Centre hosts speakers not named above should opportunities arise.

RULES & REGISTRATION

(ECA/WORKSHOPS/TRIPS)

The following pages are to be read in conjunction with the “General & Financial Conditions 2018-2019” document of the International School of Geneva.

FEES

Please refer to the fees indicated for each activity.

REGISTRATION

Registration is necessary before a child can be admitted to the ECA/workshops programme. Registration is accepted online on the Ecolint website (MyEcolint.ch/...) via the tab Extra-curricular Life. Availability is subject to capacity and is granted on a first-come-first-served basis.

Registration is for the full school year, i.e. September to June, unless otherwise indicated (i.e. workshops), and are pro rata for late registrations. Late registrations are possible but subject to the availability of places in the activities and with the teacher’s agreement.

GENERAL CONDITIONS

The financial commitment is for the full school year, i.e. September to June, unless otherwise indicated (i.e. workshops or trips where deposits may be required). No reduction in fees will be made by the school in case of cancellation or non-respect of the contract, or in case of any absences, withdrawal or dismissal of the student. Exception will be made for student relocation, in which 3 months written notice should be given to the STEM Director before the start of the next term.

To maintain children in a safe environment at school, students require adult supervision

at all times. In the case of an Early Years or Primary student, if a parent or guardian has not arrived by the end of the session (a 10 minute grace period applies), the student will be taken to the After School Care (ASC) and parents billed accordingly.

Lessons missed by students are not replaced and will be billed.

The school reserves the right to cancel an activity in case of insufficient registration, conflicts with other activities or logistic problems.

Activities take place both on and off the campus. By registering in these activities, parents thereby authorise their child to take part in said trips. The school reserves the right to change schedules, or venues. There are no ECA during school holidays.

CODE OF CONDUCT

The school’s Code of Conduct, as found in the Parent and Student Handbook, represents the central values of the school and is based on the belief that one of the school’s main aims is to support the development of decent, respectful and caring citizens of the world.

All members of the community are expected to treat each other with respect. Students are expected to follow instructions given by adults regardless of their role. The teachers and other adults in the school will treat the students with respect.

A student who does not conform to the Code of Conduct risks being asked to leave the programme permanently.

INFORMATION

BOOKING

If you wish to book all or a specific space in the STEM Centre, please email the STEM Centre Director to check availability and conditions (see CONTACTS).

SCHEDULE

The STEM Centre’s opening hours are adapted to the activities taking place there, thus, it may be closed at other times. Please refer to the schedule for each event or activity. For your information, the campus of La Grande Boissière is open from Monday to Friday from 7:30-20:00 and Saturday from 13:00-18:00.

ACCESS

The STEM Centre is ideally located on La Grande Boissière campus, between the Route de Chêne, a two minute walk from the Grange-Canal TPG 12 tram stop, and the Route de Malagnou, Rieu bus stop TPG 5, 25, 61 via the Promenade Charles-Martin and the Petite-Boissière road. The campus has 200 parking spaces available for evening events. We recommend you use public transport for day events.

CONTACTS

- **STEM CENTRE**

Fondation de l'École Internationale de Genève
62, route de Chêne
CH-1208 Genève
+41 22 787 2548

STEM Centre Director: Marie-France LABELLE (marie-france.labelle@ecolint.ch)

- **CENTRE DES ARTS**

Fondation de l'École Internationale de Genève
62, route de Chêne
CH-1208 Genève
+41 22 787 26 75
www.centredesarts.ch

Centre des arts Director: Isabelle MULLER (isabelle.muller@ecolint.ch)

Assistance: zara.preece@ecolint.ch or tao.nobel@ecolint.ch

Centre des arts: centredesarts@ecolint.ch

- **EXTRA-CURRICULAR ACTIVITIES - LGB**

ECA and Sports Director: Patrick MACAZAGA (patrick.macazaga@ecolint.ch)

Assistance: cecile.byrne@ecolint.ch

- **DEVELOPMENT OFFICE - FOR GIFTS AND DONATIONS**

Our school is a not-for-profit foundation which is entirely financed by school fees. We solicit our school community to help us bring about essential projects and improvements, as enhancing each aspect of our provision is one of our priorities.

Development Associate: Brian WAHLEN (brian.wahlen@ecolint.ch)

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www.ecolint.ch/overview/supporting-ecolint

STEM PROGRAMME

The STEM Programme offers secondary school students the opportunity to develop 21st Century competences such as inquiry, research, critical thinking, problem solving, self-discipline, collaboration and global awareness. Throughout the course, students are given design problems and inquiry questions that focus on global issues. Using the design cycle to guide them, students are asked to empathize with the challenge, research, develop their ideas and build creative and innovative solutions or products. They gain new skills in 3D printing, laser cutting, programming, robotics and electronics. At the end of the course, students present and evaluate their products during the Annual STEM Centre Exhibition. For each project, students need to submit a design folder, as an ePortfolio, which contains evidence of all the work undertaken. This ePortfolio is graded using specific

WE ARE LOOKING FOR STEM AMBASSADORS!

If you are part of our Ecolint community and are passionate about science, technology, engineering and mathematics (STEM), we need you! We are looking for volunteers to offer their time and enthusiasm to help bring STEM subjects to life and demonstrate their value in life and careers. STEM Ambassadors, students, engineers, designers, architects, scientists, technicians, or other will have an important role in engaging with students in and outside of the classroom in order to bring new inspiring perspective to STEM and career opportunities.



STEM Centre

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