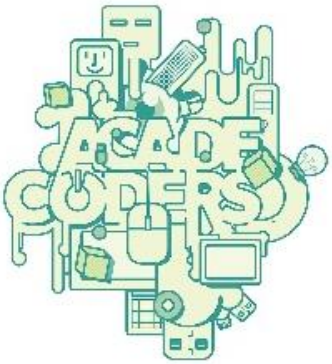
Acadecap International School
1010 Morrison Drive
Ottawa, ON K2H 8K7
T: (613)-721-3872
F: (613)-721-8189
W: www.acadecap.org
E: info@acadecap.org

ACADECODERS SUMMER 2020 (AGES 8+)

AcadeCoders is a coding and robotics camp focused on introducing campers to various technological disciplines. This summer, AcadeCoders is taking a virtual approach to learning! We will be diving into the coding world using Processing and Python, as well as TinkerCAD and the Raspberry Pi.



Our 8 week program runs from June 22nd to August 14th, and will be delivered virtually using Google Meet. Coders will have face-to-face instructional time with counsellors and complete a variety of guided and independent learning activities using their own AcadeCap email accounts. Virtual AcadeCoders will run from 9 am to 2 pm every week day, giving coders plenty of time to enjoy the summer outdoors in the afternoon.

Coders will choose which programming language they would like to learn in, either **Processing** or **Python**.

Why choose Processing? Processing is specifically designed to graphically display code and is targeted towards artists and designers who wish to work with complex data visualization. The way code is written in Processing is very transferable to the code used in common robotics development platforms such as Arduino boards.

Why choose Python? Python is a great language for programmers of all levels. Its simple syntax and powerful libraries allow the programmer to focus on getting the job done. If you're interested in areas such as artificial intelligence, big data or cybersecurity, Python is a great place to start.

Each week, counsellors will send home a list of required software and computer requirements to prepare for the upcoming week. Here's a sneak peek of some of the awesome learning activities we have planned this summer:

- Decrypt and encrypt messages
- Image manipulation
- Creating a choose your own adventure game
- Creating a 3D model
- Introduction to Raspberry Pi
- Weekly Jiu-jitsu
- And more!

NOTE: We are monitoring the evolving situation and are awaiting guidelines concerning the opening of day camps in Ontario. Parents will be notified once in-person camps can be offered. The programming offered may be different.

Week 1: June 22 – June 26 ENCRYPTION: DECODING CYPHERS (PROCESSING OR PYTHON)

CREATING AND SOLVING SECRET MESSAGES: The AcadeCoders will create a program that will be able to decrypt and encrypt messages. AcadaCoders will first learn the basics of programming and will use that knowledge to tackle how to create a Caesar cypher.

Learning Goals: AcadeCoders will be able to understand how the Caesar cypher works and apply the coding knowledge gained throughout the week to create a successful program.

Week 2: June 29 – July 3 (4 days) IMAGE MANIPULATION (PROCESSING OR PYTHON)

LEARN THE CODE BEHIND MANIPULATING IMAGES: In this week, AcadeCoders will get to use a powerful visual Processing/Python programming environment to manipulate images. The coders will learn to manipulate images in different ways such as gray scaling an image, warping an image and cropping an image all with code.

Learning Goals: AcadeCoders will be able to understand how to manipulate the pixels and space on the screen with code to get the desired image manipulation effect.

Week 3: July 6 – July 10 **CHOOSE YOUR OWN ADVENTURE (PROCESSING OR PYTHON)**

CREATING A CHOOSE YOUR OWN ADVENTURE GAME: AcadeCoders will plan a storyboard for their game and by using the Processing/Python development environment they will code the scenes to their story. The coders will learn to create story lines, use storyboard templates and code their interactive story to life.

Learning Goals: AcadeCoders will be able to understand how to use storyboard templates, how to create a manageable story within the given time frame, and understand the basics behind the code provided to bring their story to life.

Week 4: July 13 – July 17 **3D MODELING**

CREATE YOUR OWN 3D MODEL: Using the program Tinkercad, the AcadeCoders will create a 3D model. This 3D model can range from a cartoon they enjoy to something that is their own personal creation. Those models can be printed using a 3D printer.

Learning Goals: AcadeCoders will be able to understand basic 3D modeling concepts such as extruding surfaces, combining shapes with negative shapes to edit objects to create a 3D work of art.

Week 5: July 20 – July 24 **GAME DEVELOPMENT**

CREATING A GAME WITH YOUR OWN 3D MODEL: This week is a build up from the previous week and will use the created 3D model as the base model for game. Any AcadeCoders that were not present in week 4 will be given a pre-built model that they can use for their game. The entirety of the game will be built using a software called GoDot.

Learning Goals: AcadeCoders will be able to understand the core fundamentals of game design and learn how to implement a working 3D model into a project.

Week 6: July 27 – July 31 **SIMULATING REAL PHYSICS (PROCESSING OR PYTHON)**

HOW DOES THE BALL FALL: AcadeCoders will create simulations of real life physics. Each small simulation will become more increasingly complex as they learn how to use code to illustrate their new knowledge on physics.

Learning Goals: AcadeCoders will understand the basic principles behind gravity and apply their understanding in code.

Week 7: August 4 – August 7 (4 days) **RASPBERRY PI**

TINKERING WITH THE PI: This week will be focused on how to set up and start using the Raspberry Pi. The coders will learn to navigate the Raspberry Pi's operating system and then learn to set up basic circuits with the Raspberry Pi. Coders will program LEDs. It is very important that the coders have all the requirements for this week as each component plays an integral part in the activities the coders will do with the Pi.

Learning Goals: AcadeCoders will be able to navigate the Raspberry Pi interface and create basic circuits that are connected to and programmed on the Raspberry Pi. Note that a Raspberry Pi unit will need to be purchased. See below.

Week 8: August 10 – August 14 **THE GAME OF LIFE (PROCESSING OR PYTHON)**

RULES AND PATTERNS: AcadeCoders will learn the rules behind the game of life by John Conway. The game is a type of 2D simulation on a grid where every cell in the grid interacts with each other. The coders will get to explore the increasing complexity of the game as the size of the grid increases and more cell patterns are introduced.

Learning Goals: AcadeCoders will be able to understand the rules of the game of life by John Conway and recognise the patterns created within the given rule sets of the game.

2020 SUMMER READING & WRITING PROGRAMME: Orton Gillingham Multisensory Teaching Sessions for Campers

For students with reading and writing difficulties, we offer Orton Gillingham-based multisensory teaching sessions, in addition to the activities provided during our camp sessions. The OG multisensory teaching sessions will be offered for 1 hour, 4-5 times a week, and the participant must register for at least 4 weeks in order for the programme to be effective. With the Orton Gillingham approach, a student learns using the visual, auditory, kinesthetic, and tactile senses simultaneously. Please contact us for more details.

Additional Information

Virtual Camp Hours: 9:00 am – 2:00 pm **Contact Information:** Email us at info@acadecap.org

Virtual AcadeCoders FAQ: What is the daily schedule? What will I need? Where do I purchase a Raspberry Pi? For more information, please visit: **http://www.acadecap.org/virtual-acadecoders-faq/**

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Registration Form: Selection of Weeks

Please select Processing (A) or Python (B) for weeks 1, 2, 3, 6, 8

☐ **1**: June 22 – June 26	☐ **A** ☐ **B**	ENCRYPTION
☐ **2**: June 29 – July 3 (4 days)	☐ **A** ☐ **B**	IMAGE MANIPULATION
☐ **3**: July 6 – July 10	☐ **A** ☐ **B**	CHOOSE YOUR OWN ADVENTURE
☐ **4**: July 13 – July 17		3D MODELING
☐ **5**: July 20 – July 24		GAME DEVELOPMENT
☐ **6**: July 27 – July 31	☐ **A** ☐ **B**	SIMULATING REAL PHYSICS
☐ **7**: August 4 – August 7 (4 days)		RASPBERRY PI*
☐ **8**: August 10 – August 14	☐ **A** ☐ **B**	GAME OF LIFE
☐ **Summer SLT (4 weeks)**	Please indicate week numbers: ex. 1,2,3,4	

Fees: **$200** per 5 day week
$160 per 4 day week (holiday week)

***Raspberry Pi Week:** A Raspberry Pi unit is required for this week. BuyaPi is located in Ottawa & carries the recommended kit & components (note that it will come preinstalled with NOOBS staring Wednesday, June 3, 2020): https://www.buyapi.ca/product/raspberry-pi-4b-ultimate-kit/

Discounted rate for all 8 weeks	**$ 1368.00**
Discounted additional week rate: (5 days)	**$ 190.00**
(4 days)	**$ 152.00**
Summer OG Multisensory Teaching Option (SLT): 4 weeks, 1 hour sessions daily	**$ 970.00**

First week: 5-day week or 4-day week	**1X**	$200 or 160
Additional 4 day week:	#**X**	$_____
Additional 5 day weeks:	#**X**	$_____
OG Multisensory Teaching Option (4 weeks)	#**X**	$_____
TOTAL FEES:		$_____

Child's Name: _____ Sex: ☐ M / ☐ F

DOB: YYYY/MM/DD Current Grade: __ Age:__ Health Card#: __Optional__

Parent's/Guardian's Name: _____

Address: _____

Postal Code: _____ Email: _____

Tel-Home: (XXX) XXX-XXXX Work: (XXX) XXX-XXXX Cell: (XXX) XXX-XXXX

Emergency Contacts: Name: _____ Tel: (XXX) XXX-XXXX

Name: _____ Tel: (XXX) XXX-XXXX

Special concerns, needs, health, allergies, behavioural etc.

_____

Media Consent

There are times we photograph or videotape the children participating in camp activities. We will publish some of these pictures (i.e.: newsletters, website, Facebook, twitter, brochures, newspaper ads, etc.), without naming individual campers. Académie de la Capitale/École internationale Acadecap International School is requesting permission to use photos/videos of your child. Please note that remuneration will not be given for the use of photos/videos.

I give Académie de la Capitale/École internationale Acadecap International School permission to publish pictures of my child

Signature of Parent/Guardian
Initial or Sign
Date YYYY/MM/DD

Waiver

I hereby release and forever discharge Académie de la Capitale/École internationale Acadecap International School, its directors, its employees, agents and all persons authorized by it from any claim, damages, action or cause of action or otherwise that may result from either personal injury or property damage suffered by the said child engaging in school/camp activities including school/camp-related online activities and assignments, however, that the school and its employees and agents exercise reasonable care.

Signature of Parent/Guardian
Initial or Sign
Date YYYY/MM/DD

Finances

Payment by Interac e-Transfer: finance@acadecap.org (Please indicate child's name in description and provide password in separate email.)

Please note there are no refunds.

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