



Elementary Computer Science classes for grades 5 - 7

Elementary Computer Science classes are week-long hands-on computer classes designed to introduce students to computer science and programming (“coding”). Students are presented with a problem that we will work through together to deconstruct into systematic steps that can be translated into computer code using the Python programming language. By the end of the week students will have written, debugged and tested a complete computer program to solve their problem. Each class focuses on working together to solve the program, using critical thinking with limited information and helping students experience writing an actual program that they understand and can modify themselves. All classes end with advice and materials to continue programming at home.

No previous programming experience required.

Fall 2016 Class

HACKING SECRET CIPHERS

Hacking Secret Ciphers introduces students to data encryption and challenges them to write a program to encrypt and decrypt secret messages. Students start by learning to conduct the process by hand, then proceed to using mathematics and then learn the process to convert their manual steps into a computer program using Python. By the end of the week they will have a fully-functional Python program that is capable of encrypting and decrypting secret messages. Once they have their own programs they will be challenged to try and crack a series of secret messages by using and modifying their existing program. We wrap up the class with a discussion of alternative algorithms to try and steps they can take to continue learning.

Instructor: Chris Kerslake

Chris Kerslake is a parent and programmer with a Computer Science degree. He started programming in elementary school 35 years ago when his school purchased their first computer. For the past year he has been working to introduce students to computational thinking and programming with his Elementary Computer Science program. Rather than offering a textbook introductory computer programming course he decided to create week-long adventures to introduce and challenge students with core computer science topics including encryption, artificial intelligence and data compression so they can experience solving interesting problems using a computer.

Class: 1 week - 5 x 1-hour classes

Cost: \$625/week - single class

\$500/week for each additional class during the same week

Equipment: XModus provides all computer equipment.

Maximum of 30 students per class

To sign-up or for more information: www.xmodus.com – 604-721-0200