# *Upper School Summer Coding Camp*
Summer 2022

ELIGIBLE STUDENTS:
Grades 9th-12th

Dates: Week long camp, Monday, August 8, 2022; running through Friday, August 12, 2022.
Times: 10:30 AM EST
Instructor: Peter Belfry
E-mail: pbelfry.scholeacademy@gmail.com

OFFICE HOURS: By appointment

UPPER SCHOOL SUMMER CODING CAMP DESCRIPTION:

In this summer program, students will learn to make their own, creative programs with Alice, free programming software that helps them learn the logic and art of computer programming. It will help them develop their creativity and logic in a fun and enjoyable way.
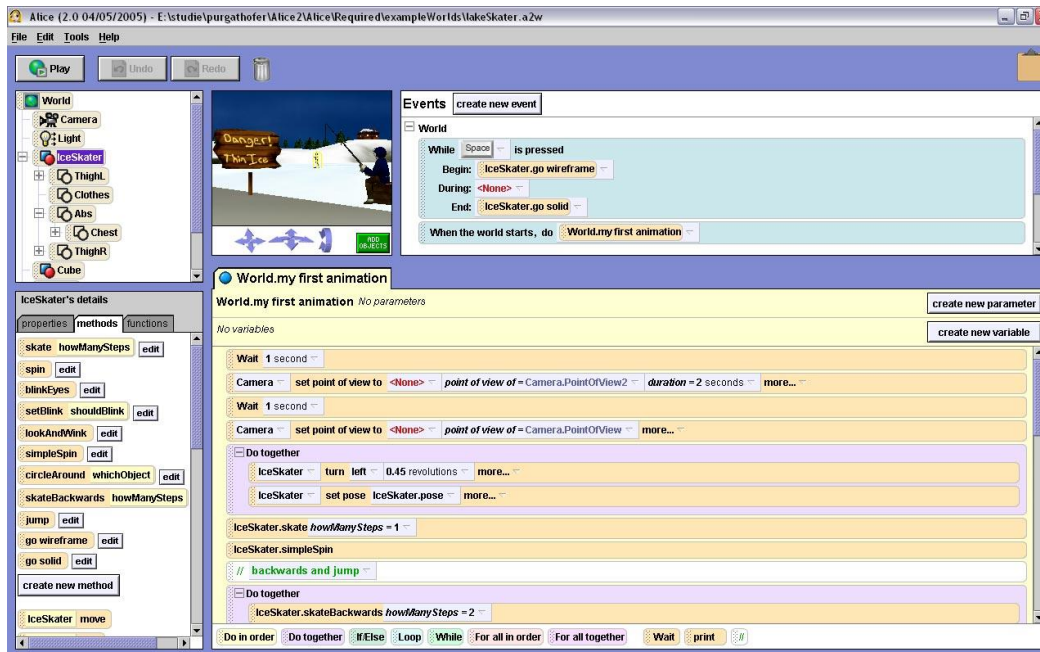
Alice is innovative programming software that makes it easy to create 3D animations, build interactive stories, or program games. Alice includes a large library of familiar characters and objects that can be used in one's program. Alice is a great tool for learning logical and computational thinking skills and the fundamental principles of programming. There are

characters and scenes with themes available that will interest students such as a space theme, a tea party theme, a sport theme, an animal theme and many more to explore.

Together we will learn various programming logic and techniques, and then students will be provided with the opportunity to try them on their own, provided with feedback and guidance so they can achieve their goals and objectives. By the end of the week, students will put all they have learned together and create their own interactive story or game to share with their family and friends.

This camp will both help to develop students' logic, math and creativity skills as well as help students who may be interested in continuing to study programming in the future. One such opportunity would be the 2022-2023 course offerings for The Logic of Computer Programming as well as The Art of Computer Programming.

As an upper school program, students will be provided with the opportunity to do programs using more advanced programming concepts. We will go through programming concepts, along with examples, and see them utilized in a program. Each student will then have an opportunity to use it in their program. Students will be able to, at the upper school level, more quickly integrate concepts and build a program of their own.

Upper School Coding Camp Map:

The outline below represents a rough sketch for how we will proceed. Instructor may adjust pacing to suit the needs of the class.

Day 1
1. Introduction to Alice User Interface
2. Introduce Objects: How to find, place, and modify objects in Alice
3. Set up scene with objects (props and characters)
4. Begin to introduce character dialog and movement

Day 2
1. Introduction to Methods and Procedures
2. Use of Get Info and User Input

Day 3
1. Functional Methods to for instance get distance and height of objects
2. Procedures
3. Writing Methods

Day 4
1. Applying methods to other objects
2. Loops
3. Conditionals

Day 5
1. Showcase story/game
2. Be provided with feedback and make improvements
3. Have completed story/game to share with family and friends

REQUIRED FREE SOFTWARE: Please download and prepare the following software ahead of the camp:

Students should download Alice 2.0 found here: https://www.alice.org/get-alice/alice-2/ (English Gallery Complete).

For Windows 10, they may need to follow this process for it to work on their computer: https://softwarekeep.com/help-center/how-to-get-directplay-on-windows-10

REQUIRED TEXTS:
No texts are required

OPTIONAL TEXTS:

For a great introduction to coding logic in general: *How to Think Like a Coder: Without Even Trying* by Jim Christian, which is available from Amazon here.

Any Alice textbook found on Amazon would be helpful.

STUDENT EXPECTATIONS IN ACTION

Students will be following the sequence of study outlined above. During class discussion, students will review, pose questions, and discuss their choices to solve programming problems. The teacher will lead discussions informed by issues and problems raised by students, as well as issues introduced by the teacher.

In this class, students will be expected to listen attentively, participate actively in class discussions and practices. Students are expected to arrive to class on time and with all assigned material completed. The instructor will facilitate learning for the student, but the responsibility for staying up-to-date with classwork and assignments ultimately falls to the student.

Summer groups are less formal than the yearlong courses, but students are still expected to participate and come to our meetings prepared. Much of the work in the camp will be hands-on practice with coding in Alice.

STUDENT EVALUATION: GRADING

No grades will be assigned for summer courses.

Note: Summer courses are not designed to be used for credit.

THE VIRTUAL CLASSROOM:

We will be using the free online "virtual classroom" software provided by Zoom, one of the leading companies that provides such software. The virtual classroom will provide students with interactive audio, text chat and an interactive whiteboard in which texts, diagrams, video and other media can be displayed and analyzed. We will provide students with a link (via email) that will enable students to join the virtual classroom.

Specific information regarding the technology used by Scholé Academy (including required technology) can be found by visiting the Technology in the Classroom section of the Student Parent Handbook.

Students will submit documents by scanning and uploading them to their personal computer, then attaching those files as .pdfs to an email. They will submit their work to the Scholarship Skills Schoology assignment page (access granted after enrollment is secured).

ABOUT THE INSTRUCTOR:

Peter Belfry has a range of teaching and tutoring experience in a variety of subjects and age levels from kindergarten through to adult education at the college level and has taught at several classical, Christian and public schools. He has experience teaching computer programming from a Christian perspective to middle and high school students as well as designing a digital coding textbook for the grade 9 level. Currently, he serves as a professor of computer science with Canadore College, teaching courses on Operating Systems and programming languages such as Windows, Linux, HTML, C++ and Visual Basic. Peter holds an Honors BA from Trent University in History as well as a BA in Education, specializing in History and Computer Science. He holds an MA from Knox Theological Seminary in Classical and Christian studies, which provides him a background for teaching from a classical perspective. For his MA program, he read many of the Great Books as well as studied Scripture and church history. Peter has completed a week-long teacher training with the Association of Classical Christian Schools and Rockbridge Academy. His favourite piece of classical literature is Dante's *The Divine Comedy*.

In addition to teaching, Peter also has experience serving in a pastoral role and enjoys volunteering to serve in his local church and community. He helps in evangelistic outreach as well as teaching lessons from the Bible. Peter has experience and training as an English as a Second Language instructor as well. He has experience teaching both online and in person. He believes in Scholé's approach in seeking "restful learning" and believes that education should be life-giving and freeing for the soul as it should acknowledge the Lord Jesus as the source of all that is true, good and beautiful. Peter lives in the North Bay, Ontario area with his wife and twin boys.

Peter provides tutoring services with Scholé Academy and teaches the following classes: *Formal Logic: The Discovery of Deduction, Writing and Rhetoric 4, The Logic of Computer Programming, and the Art of Computer Programming*.