The purpose of this course is to introduce the wonderful world of Computer Science to students through the unique programming environment called Alice. Alice was developed by Carnegie Melon University to make computer science more enticing and accessible to young students. Alice is intended to make the learning process more engaging, and provides the opportunity to build 3D models and develop interactive stories. Without having to stress over complicated, confusing syntax, the student can focus on learning the proper foundations of computer science in a fun, user-friendly environment.

Day 1 – Bunnies and Kangaroos

Two short tutorials introduce the learner to Alice by walking through the creation of a world. Students get a good first-time glimpse at what Alice can do. Concepts introduced include scene set up and built-in methods. The first tutorial is worked through together, and the second tutorial gives students the opportunity to practice what they have learned.

Day 2 – Shark Attack!

Students expand their comfort with Alice by working in a watery world. In this lesson, students program a shark to attack a character, and make sure the fearless hero escapes unharmed! This lesson reinforces scene set-up, and introduces the basics of camera usage, methods, events, objects, and vehicles.

Day 3 – Astronaut Adventure

Students continue to learn fundamentals of computer science by building a lunar world, complete with an astronaut and a Humvee. Students will utilize camera views and be able to move the camera, using the “DoTogether” and “asSeenBy” commands, using the clipboard and trash can, and setting a vehicle to an object.

Day 4 – Princess & the Dragon

Students create a short animated story about a princess who is captured by a dragon and rescued by a knight that comes riding in. Students learn how to add objects, set up scenes, write new methods, control the camera, events, and more!

Day 5 – Skater World Part I

Students create a world for a skateboarder while incorporating elements of objects, scene set-ups, property changes, new methods, camera control, importing and animating 2D images, 3D text, and sound.
Day 6 – Skater World Part II

Students complete their skating world in today’s class.

Day 7 – How Tall Are You? Introduction to Decisions and Functions

More advanced computer programs involve decisions: If this happens, then do this. Otherwise, do this. Students learn how to incorporate decisions into their story about a man and a penguin! In any programming language, the concept of IF/ELSE is a crucial building block in the learning process.

Day 8 – Headshots in Alice

Students learn more about Alice’s capabilities in today’s animation. They learn how to insert faces into Alice in the form of pictures on billboards. Topics covered include billboards, camera movement, and 'invisible'.

Day 9 – Ninja Fever!

Students learn how to make objects. In this project, a group of possibly evil ninjas move in unison. The main programming concept today is the use of lists, a pre-cursor to the formal study of arrays in other programming languages.

Day 10 – B is for Broccoli (and Bunny)!

Simple loops and conditional loops are introduced in this final class. In this created world, students learn to program how to control the movement of the bunny using loops, and to eat a variable amount of broccoli. Today’s project brings together all the topics covered throughout the course.