




# Cornwall-Lebanon School District Curriculum Overview

## Alice 3D Programming – High School

length of time in weeks	Concepts & Competencies	Common Assessments	Academic Standards CSTA K12
Unit 1  2	<p style="text-align: center;"><b><u>Getting Started with Alice</u></b></p> <p>Student will be able to create a new Alice world with 3D objects. Student will be able to modify the objects' properties and use the objects' methods to implement a user story. Student will be able to use both sequential and simultaneous code execution when animating the world's objects.</p>	<ul style="list-style-type: none"> <li>➤ Unit 1 Project</li> <li>➤ Unit 1 Test</li> </ul>	3A-A-3-10 3A-I-1-27
Unit 2  2	<p style="text-align: center;"><b><u>Methods</u></b></p> <p>Student will be able to create world methods to break the code into logical, manageable section. Student will be able to create object methods to isolate an object's specific behavior. Student will be able to create and use dummy objects to change the camera views throughout a program. Student will be able to effectively document his/her code through the use of comments.</p>	<ul style="list-style-type: none"> <li>➤ Unit 2 Project</li> <li>➤ Unit 2 Test</li> </ul>	3A-A-4-8 3B-A-5-7
Unit 3  3	<p style="text-align: center;"><b><u>Variables and Functions</u></b></p> <p>Student will be able to create and use method variables to store data within a method. Student will be able to create and use property variables to store data for a specific object. Student will be able to link objects together using the vehicle property. Student will be able to create and use a function that calculates and returns a value. Student will be able to create and use method parameters to allow for code re-use. Student will be able to read in user input and store it in a program variable. Student will be able to display strings concatenated with numbers converted to strings.</p>	<ul style="list-style-type: none"> <li>➤ Unit 3 Project</li> <li>➤ Cumulative Multiple Choice Test</li> <li>➤ Cumulative Free Response Test</li> <li>➤ Cumulative Programming Test</li> </ul>	3A-A-5-6 3A-A-3-10

<b>Unit 4</b> <div style="border: 1px solid red; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin: 5px auto;">3</div>	<p style="text-align: center;"><b><u>Flow Control</u></b></p> <p>Student will be able to create and use an “if” statement to change the flow of the program based on varying conditions. Student will be able to create and use a “for” loop to repeat a block of code a fixed number of times. Student will be able to create and use a “while” loop to repeat a block of code an unknown number of times based on a condition.</p>	<ul style="list-style-type: none"> <li>➤ Unit 4 Project</li> <li>➤ Unit 4 Programming Test</li> </ul>	<p>3A-A-3-10 3A-A-2-1</p>
<b>Unit 5</b> <div style="border: 1px solid red; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin: 5px auto;">3</div>	<p style="text-align: center;"><b><u>Lists and Arrays</u></b></p> <p>Student will be able to create an array, traverse and access its elements. Student will be able to create a list, traverse, access and add/remove elements. Student will be able to generate and use random numbers and objects to vary the behavior of a program.</p>	<ul style="list-style-type: none"> <li>➤ Unit 5 Project #1</li> <li>➤ Unit 5 Project #2</li> <li>➤ Unit 5 Multiple Choice Test</li> <li>➤ Unit 5 Programming Test</li> </ul>	<p>3A-A-4-9 3A-A-3-11 3A-D-5-17 3B-A-4-13</p>
<b>Unit 6</b> <div style="border: 1px solid red; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin: 5px auto;">5</div>	<p style="text-align: center;"><b><u>Events</u></b></p> <p>Student will be able to create a new event based on a user key press. Student will be able to create a new event based on a user mouse click. Student will be able to create a handler method for each event.</p>	<ul style="list-style-type: none"> <li>➤ Unit 6 Project</li> <li>➤ Cumulative Multiple Choice Test</li> <li>➤ Cumulative Programming Test</li> <li>➤ Cumulative Final Project</li> </ul>	<p>3A-A-5-4 3A-A-3-11 3A-C-5-14</p>