

GBCS Curriculum Guide			GRADE: 10-12		SUBJECT: Computer Science 3			
Topic	Pacing	Unit	Standards	Enduring Understandings & Essential Questions	Learning Targets	Vocabulary	Materials	Assessments
Getting Started with Alice	1 Week	Alice	Explain the key functions and applications of software.	Getting started with Alice	Identify screen components. Create and save a new project. Add an object to a scene	Argument, Class, Debugging, Gallery, Scene, instance, procedure	Computer with Alice	Test and Edit the White Rabbit Project
Add and position objects	1 weeks	Alice	Describe the range of languages used in software development.	How do we add and position objects in Alice	Add multiple objects to a scene. Edit properties of an object. Describe three-dimensional positioning axes	Gallery, instance, procedure	Computer with Alice	Use the whiteRabbit Program to adjust the hands and arms of the rabbit
Use Procedures and Arguments	1 week	Alice	Summarize how data is organized in software development.	How do we create procedures and arguments in an Alice program	Create a program using the scene and code editor. Use procedures to move objects. Test and debug animation	Argument, Procedure	Computer with Alice	Using the WhiteRabbit program, edit the procedures to move the rabbit
Add Rotation and Animation	1 week	Alice	Explain data transmission codes and protocols.	How do we add motion to a project	Create a program using random movements. Add a control statement to a program	Control Statement, randomize, roll, turn	Computer with Alice	Using the White Rabbit program, create a control statement to randomly rotate and roll the rabbit
Declare a procedure	1 week	Alice	Apply language specific programming tools/techniques.	How do we declare a procedure in Alice	Flowchart a storyboard. Describe inheritance. Create a user defined procedure	Procedure, inheritance, flowchart, storyboard	Computer with Alice	Create a flowchart and storyboard for the white rabbit.
Use Control Statements	1 week	Alice	Create design specifications for a computer application.	How do we create a control statement	create a control statement	Control statement, function, inheritance	Computer with Alice	Using the white rabbit program, create and add a control statement to the actor class
Use Function	1 week	Alice	Create design specifications for a computer application.	How do we use functions to return a value	Implement a function to control movement and return a value	function	Computer with Alice	Using the white rabbit program, create a function that sets a movement distance and avoids collision

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If and While Control Structures	1 week	Alice	Create design specifications for a computer application.	How do we make decisions in Alice?	Create a program that uses an If or While Statement	If, While, Process Flow	Computer with Alice	Using the White Rabbit program, have the bunny make a decision based on a random variable. They will also execute a while loop
Expressions	1 week	Alice	Create design specifications for a computer application.	How do stop in front of an object, regardless of its position on the 3d grid	using math operators, create an expression to determine distance. Use the getDistanceTo function	getDistanceTo	Computer with Alice	Have the bunny GetDistanceTo and object, subtract the depth of the target object to stop in front of it.
Variables	1 week	Alice	Demonstrate proficiency in developing an application using an appropriate programming language.	How do we use conditional operators n a program	Students will create a program using a conditional operator	variable, conditional operator	Computer with Alice	Students will adjust the white rabbit programs relational operators.
Keyboard Controls	1 week	Alice	Create design specifications for a computer application.	How do we program hot keys to move out objects	Students will create keyboard controls.	Keystroke	Computer with Alice	The bunnies will move with keystrokes
Complete Animation	3 weeks	Alice	Gather data to identify customer requirements.	How do we make a complete animation?	Students will create their own animation from storyboard to user controls		Computer with Alice	Students will create their own animation from storyboard to user controls
Scratch	3 weeks	Scratch	Create design specifications for a computer application.	How do you create a scratch program?	Students will create a multi object, multi scene program	Sprite, background, scene	Computer with Internet access	Escape the room program
Finch Robots	3 weeks	Finch Robots	Employ critical thinking skills independently and in teams to solve problems and make decisions (e.g., analyze, synthesize and evaluate).	How do we create a Finch robot program using snap	Create a finch laser tag program	movement, sensing, RGB, gyroscope	Computer with two finch robots and Snap installed	Finch Laser tag program