



Southmoreland School District Game Programming Curriculum Overview

Game Programming Overview:

This course explores the concepts of Java and Media Computation with an emphasis on object-oriented programming (OOP) and design. This course will cover topics typically found in a first semester college computer programming course. Students will learn how to problem solve and to create software using the Java and Python programming languages. Course content is focused on learning the logic structures universal to most all programming languages: loops, if statements, arrays, etc. Other topics include program design and implementation, algorithm analysis and object-oriented programming design. This course is intended to serve both as an introductory course for computer science majors and for students who will major in disciplines that require significant involvement with computing.

Module Titles:

Module 1: Design a simple Alice Program

Module 2: Programming with Karel

Module 3: ActionScript 2.0 and 3.0

Module Overviews:

Module 1: Design a simple Alice Program

In this module, students will learn how to design a simple Alice program, build a simple Alice program, Animate Alice objects by sending them messages, Use the Alice doInOrder and doTogether controls, change an object's properties from within a program and use Alice's quad view to position objects near one another. They will read, analyze, and determine the proper way of creating a simple Alice program. Finally, they will apply their knowledge by creating a program while two objects look at each other and communicate, tell a story and create a short movie clip.

Module 2: Programming with Karel

In this module, students will learn how to design a JavaScript Karel program, build a simple Karel program, Animate Karel and tennis ball objects by sending them messages, use the Functions, Top Down Design, commenting code, for loops, If statement, If/else, while loops and more. They will read, analyze, and determine the proper way of creating a Karel program. Finally, they will apply their knowledge by completing the challenge programs.



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Module 3: ActionScript 2.0 and 3.0

In this module, students will learn how to design an animation using ActionScript to control the program, build a simple game, Animate and control objects by using a movieclip, Use Functions, commenting code, for loops, If statement, If/else, while loops and more. They will read, analyze, and determine the proper way of creating a Flash/Animate program. Finally, they will apply their knowledge by completing more complex games such as a racing game, and later in the year a Frogger and Mario game.