

SmashCode #1 Overview

Course Description: SmashCode #1 introduces students to the exciting world of coding via the Python Turtle Graphics programming library. This computer science course will introduce students to the Python Turtle Module, emphasizing the movement of objects around an environment and the creation and manipulation of shapes. Students will learn the foundations of computer science and the basics of programming, with an emphasis on helping students develop logical thinking and problem-solving skills. SmashCode #1 will also provide a smooth transition into SmashCode #2 and is highly recommended for students considering a computer science-related field.

Grade Level: 9-12

Curricular Work Thus Far:

1. Solicited feedback from Kirkwood staff and Kirkwood students to guide course development.
2. Examined national standards ([Computer Science Teacher Association K-12 Standards](#)) and [state standards](#) to inform course development.
3. Developed a curricular scope & sequence of two units within the semester course.
 - Unit 1:** Intro to Programming with Turtle Graphics
 - Unit 2:** Basic Python and Console Interaction
4. Developed unit essential questions and student learning goals in alignment with national standards. Examples include, but are not limited to:
 - **Essential Questions:**
 - How can we use computer programming to model and solve real world situations and problems?
 - What makes a good program?
 - How can computing and the use of computational tools foster creative expression?
 - What does it mean to be literate in the 21st century?
 - **Student Learning Goals:**
 - Students will move an object across a coordinate plane along the X and Y axis.
 - Students will use a For Loop to repeat a pattern a specific number of times.
 - Students will build functions to simplify code.

- Students will use Top Down Design to break large problems into smaller solvable problems.
- Students will use variables as units of storage.
- Students will take User Input to allow interaction with a program.
- Students will use If/Else statements to branch to different chunks of code.
- Students will use all concepts learned in this course to create a Choose-Your-Own-Adventure Project using the Python Turtle Module.