

Course Description: Identify and explain the steps of the software engineering design process for gaming theory and design. The design process steps are identify the problem; research the problem; develop possible solutions; select the best possible solution(s); code prototypes and/or models; test and evaluate; communicate the solutions; and redesign. Using Scratch, a graphical programming language developed by MIT, students will learn basic programming concepts. These concepts include linear breakdown of sequences; event handling such as what happens when the ball reaches the edge of the screen; looping events (while or for x times); cause and effect; and use of variables.

Goals & Science/Technology Standards Addressed:

1. Identify the need or problem
2. Research the need or problem
3. Develop possible solution(s)
 - * Brainstorm possible solutions
 - * Draw on mathematics and science
 - * Articulate the possible solutions in two and three dimensions
 - * Refine the possible solutions
4. Select the best possible solution(s)
 - * Determine which solution(s) best meet(s) the original requirements
5. Construct one or more prototypes and/or models
 - * Model the selected solution(s) in two and three dimensions
6. Test and evaluate the solution(s)
 - * Does it work?
 - * Does it meet the original design constraints?
7. Communicate the solution(s)
 - * Make an engineering presentation that includes a discussion of how the solution(s) best meet(s) the needs of the initial problem, opportunity, or need
8. Redesign
 - * Modify the solution(s) based on information gathered during the tests and presentation

Expected Outcomes: Students will appropriately use Scratch, a programming language, to create interactive games and multimedia presentations.

Assessment/Grading Policy: This course will be graded based on *participation* (40%), *attitude* (20%), and *classwork* (40%).

Other Expectations: Students must respect everyone in the room, try their best on every assignment, and let the teacher know if information is not clear or need assistance.

Extra Help Schedule: By appointment.

Tips for Parents: Communicate questions, comments, and concerns to the teacher; be encouraging and supportive of your child's skill development; if possible, allow the student to use technology at home. A CD-ROM is available for home installation.