Programming with Scratch

"Imagine, Create, Play, Share, Repeat" is a mantra for Scratch suggested by the George Lucas Educational Foundation who publishes *Edutopia*, a free publication dedicated to technology and education. Using that mantra can lead you through the steps of how to approach a Scratch project.

Give or Get an Idea:

Have your students brainstorm what they want to create, or give them a prompt that is somewhat open-ended. It could be something like, "Create a game in which a character gains points by going through a maze and eating things (sound familiar?)" or " Create an animation of the life cycle of an animal that goes through metamorphosis."

Brainstorm the "Rules:"

Programming is all about assigning "rules" to different objects. For example, a rule could be that every time your character touches an object two things need to happen: 1). The object disappears and 2). The score goes up one point" Brainstorming as many rules as you can and listing them out helps to develop a "plan" (or algorithm) for the program.

Start Programming:

Get into Scratch and start writing the program based on the rules. Does an object need to move? If so, go to the Motion section. Does the character need to change appearance or make a noise? If so, go to Looks or Sound. Does a number need to increase in a score box? If so, look under Numbers and/or Variables. Does something need to happen again and again or a certain number of times? If so, go to Control.

Test, Troubleshoot, Test Again:

One of the most valuable skills in programming is the idea of running your program, discovering bugs, and going back and fixing them. This is problem solving at its best, and it can be a wonderful opportunity for collaboration. Have students peer review each other's work to offer alternate solutions or to suggest improvements. VERY RARELY WILL YOUR PROGRAM WORK PERFECTLY THE FIRST TIME YOU WRITE IT AND THAT'S A GOOD THING!

Don't Know Where to Start?:

Join the Scratch community at http://scratch.mit.edu. You can view the thousands of uploaded examples of Scratch programs to try them out. Once you become a member, you can download any Scratch project to your computer and "reverse engineer" it. That is, you can look at what other programmers (the majority of them are kids) have done, then borrow and improve on their ideas.