

Scratching the Surface: Third Grade Programming Nick Grippin Computer Systems Lab 2009-2010

Abstract

The goal of this project is to successfully mentor elementary school students in the use of various techniques that Scratch programming allows. These techniques can be as relevant as technology and math, or go as far as teaching literary topics. This project/mentorship will involve traveling to Cardinal Forest Elementary School for an hour every Thursday to help teach kids in the basics of using Scratch.

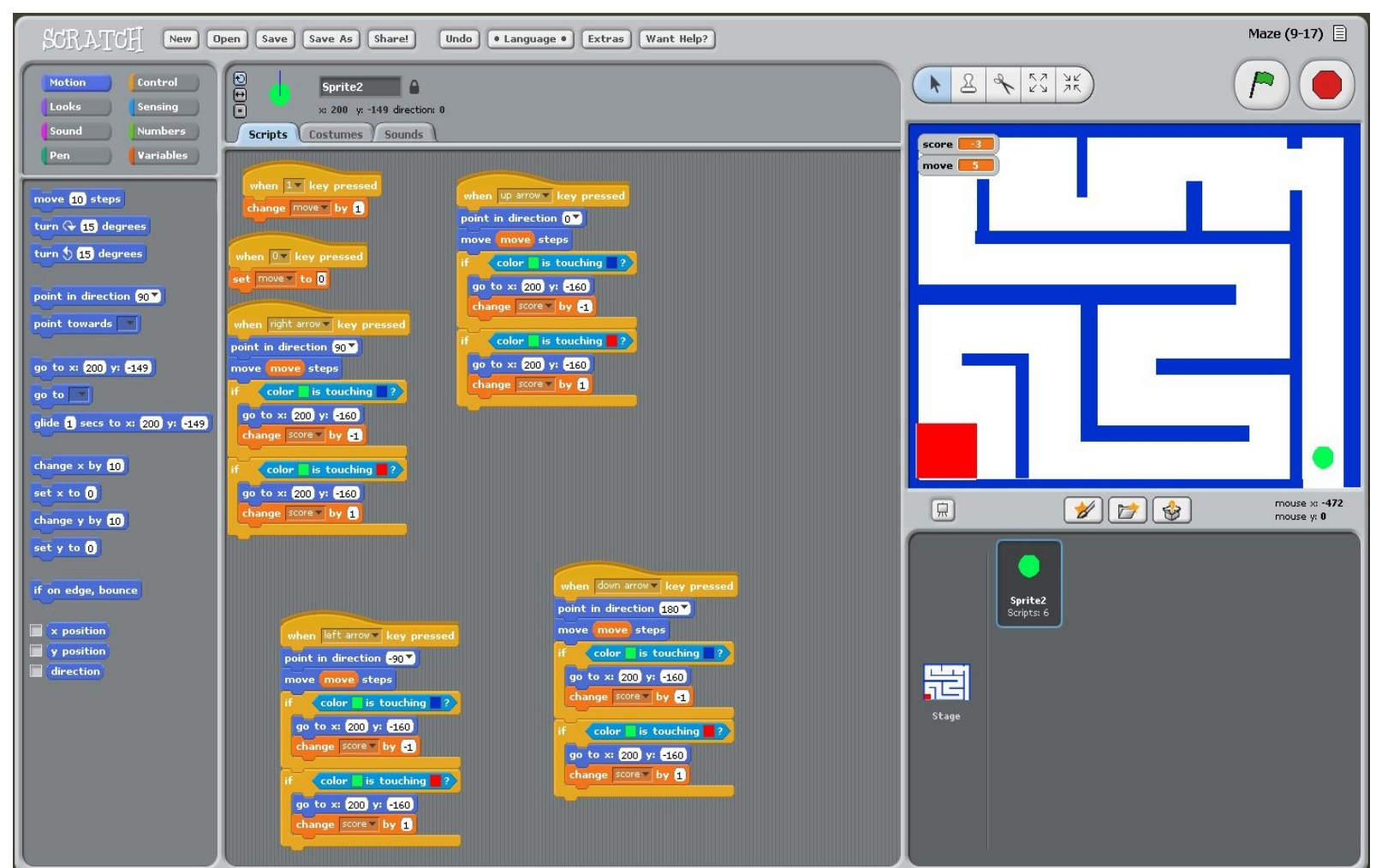


Fig 1: A simple maze program in Scratch

Background and Introduction

In the previous two years, students have already done several research projects in this area. Jessica and Crystal worked at Cardinal Forest last year, and helped students learn the mathematical techniques that the students will need to know. This will mainly include the coordinate plane, which will require us to first demonstrate the use of negative numbers. The previous students spent the first two months teaching these topics in order for the students to appropriately use the Scratch program. After this, they spent several months working on a basic program involving a snowman in order to practically apply these skills in the Scratch program. The last part of the class was devoted to individual games of the student's choice, with the help of Jessica and Crystal to mentor the students in any other aspects of the language they needed to know.

Discussion

Currently, Amanda Gilbert and I are traveling to Cardinal Forest Elementary every Thursday in order to teach or assist the class. Due to difficulties in scheduling, I am only able to be at the school for the first half of the third grade Scratch class. While this does allow me to introduce myself to the students and get a lesson started, I can never see it through to the end, which causes some difficulties in discovering the results. The results I have seen from my first two trips have had both expected and surprising results.

Results and Conclusions

If all goes well, the project will end at the end of the year with the students completing a relatively complex final project. The students will have an advanced understanding of the coordinate plan, as well as a more complete sense of the SOL topics we focus on throughout the year. The students will also have an outlet for creativity and restlessness, since the class requires a lot of innovation and outside-the-box thinking. Since programming is not often taught to elementary students, this project will hopefully spread to other schools as well, allowing students to have a broader base in programming before they reach high school. Students with an introduction into technology early on will probably develop more interest in the area, and hopefully pursue this interest in their high school career.

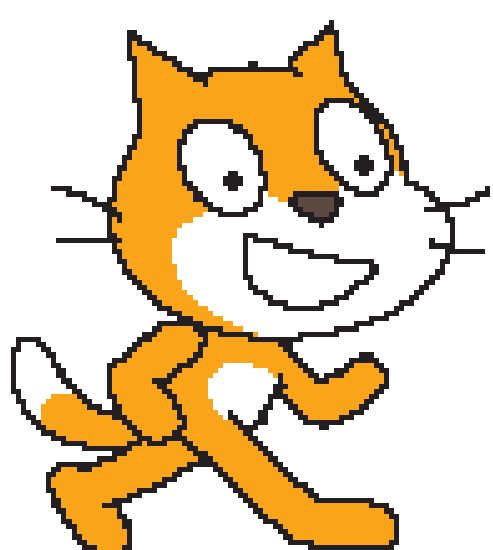


Fig 2: Scratch Cat