

Introduction to simulation programming

Objective: Create a hands on engaging program my student can use that stimulates interest in programming basics.

When will students use this unit: Students will use this unit at end of year or may be placed at the beginning as an inquiry based-learning project?

Teacher:

Date:

Subject / grade level:

Materials: Computer, scratch tutorial, pencil, and paper

NC SCOS Essential Standards and Clarifying Objectives

Lesson objective(s): Students learn to code using the visual language called scratch.

Differentiation strategies to meet diverse learner needs:

Lower Differentiation: Lower student follow video and make the basic game

Middle Differentiation: Follow steps 1 and 2 and make a Drum Kit

Highest Level Differentiation: These students do not need to watch videos, they can move straight into making a two player game.

ENGAGEMENT

- Students will watch tutorial video on programming scratch

EXPLORATION: Students can create games, stories and animations utilizing “Scratch” tutorials.

1. Go to the “Scratch website”(<https://scratch.mit.edu/>)
 2. Click on create
 3. Next click script
 4. Choose Scripts
 5. Drag a movement script into designated area.
 6. Next, add sound by clicking the sound icon and then selecting a sound and clipping on to the move block.
 7. Add another move block
 8. Drag out a repeat block and drop it on top of the stack. (You want the “mouth” of the *repeat* to wrap around the other blocks.)
 9. Click looks and drag out a say block.
 10. Drag out a flag click block and snap it on top
 11. Now try change color, drag out effect block and change color.
 12. Snap on when press block. *Now press key and see what happens.*
 13. Add a background by clicking on the mountain in the lower left hand corner. Select a background and begin.
 14. Each character in “Scratch” is called a sprite to add a new sprite click on one of the new sprite icons. You can choose from available sprites or import one of your own.
 15. Click the sounds tab and add sound to your animation.
 16. Finally, share your project.
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EXPLANATION: Students will use a VPL (VISUAL PROGRAMMING LANGUAGE) to drag and drop visual block to write code. These are the foundations of computer science. Students will be introduced to code by utilizing Anna and Elisa miniscule coding.

ELABORATION: Students can design characters and animate them.

EVALUATION

Presentation of working animations and graphic will be evaluated. Also, a working knowledge of scripts and how they are used effectively.
