Unit 2: Exploring Scratch

Content Area: **Technology**
Course(s): **Technology**
Time Period: **Generic Time Period**
Length: **Weeks**
Status: **Published**

Unit Overview

Students will build on initial explorations of Scratch by creating an interactive Scratch project. Students will be introduced to a wider range of Scratch "blocks" and become familiar with the concept of sequence.

Standards

TEC.5-8.8.1.8.A.5	Select and use appropriate tools and digital resources to accomplish a variety of tasks and to solve problems.
TEC.5-8.8.1.8.D.1	Model appropriate online behaviors related to cyber safety, cyber bullying, cyber security, and cyber ethics.
TEC.5-8.8.1.8 A.1	Use appropriate technology vocabulary.
TEC.5-8.8.1.8 A.2	Use common features of an operating system (e.g., creating and organizing files and folders).
TEC.5-8.8.1.8 B.1	Demonstrate an understanding of how changes in technology impact the workplace and society.
TEC.5-8.8.2.8.E.1	Work in collaboration with peers and experts in the field to develop a product using the design process, data analysis, and trends, and maintain a digital log with annotated sketches to record the development cycle.

Essential Questions

How can creative computing help one use computational concepts across many disciplines and contexts?

How can engaging in creative computing prepare one for a career as a computer scientist or programmer?

How does interacting with a computer as a designer, rather than a consumer, increase knowledge, creativity, imagination, and literacy?

How can reflection enable us to grow and learn?

Application of Knowledge: Students will know that...

- Creative computing offers opportunities to design and make for the computer, not just listen, observe,

and use

- Creative computing offers opportunities to engage with others as audience, coaches, and co-creators
- Reflecting about your practice enables one to review and rethink your creation

Application of Skills: Students will be able to...

- Define the following terms: experimenting and iterating, testing and debugging, sequence
- Experience building up a program by experimenting and iterating
- Explain how the following concepts and practices work in Scratch: sprite, motion, looks, sound, costume, backdrop, tips window, remix, interactive collage, pair-share
- Express a complex activity using a sequence of simple instructions
- Give appropriate feedback on design ideas and works-in-progress within a critique group

Assessments

- Design Journal (personal reflection and self assessment by student)
- Rubric for "About Me" interactive collage

Suggested Activities

- Students will practice using sequence in specifying a set of instructions -- Students will pair with a partner. Partner A will view a series of dance moves from a video while Partner B is turned away from the video. Partner A will describe to partner B how to perform the sequence of dance moves shown in the video. Partners will discuss the importance of using correct sequence to communicate a set of instructions.
- Students will complete a basic "step-by-step" tutorial to create a dancing cat using Scratch blocks.
- Students will complete a "10-block Challenge" where they are challenged to create a basic program in Scratch using only 10 blocks (go to, glide, say, show, hide, set size to, play sound until done, when this sprite is clicked, wait, and repeat).
- Students will investigate the problem and find a solution to practice debugging a program in the Scratch Debugging challenge (choose one of five debugging challenges in Scratch)
- Students will explore and experiment with a wider range of Scratch blocks (sprites, costumes, looks, backdrops, and sounds) by creating a personalized, open-ended interactive collage that is a digital representation of their personal interests.
- Students will give and get feedback on design ideas and works-in-progress through critique groups.

Activities to Differentiate Instruction

Peer-to-peer "Tech Buddy" support

Students may work at their own pace

Advanced students may use their computer skills to enhance their Scratch program

Students who complete the daily assignment and are up-to-date on all projects may choose from one of the following activities if time permits in the period:

- Practice their math and ELA skills using recommended online educational websites provided by the teacher
- Play activities and games on teacher's website at www.quia.com
- Keyboarding exercises
- Smart Board Challenges

Integrated/Cross-Disciplinary Instruction

LAL -- literacy skills involved in reflective journaling

Math -- sequencing and computation

Art -- principles of design

Resources

- Computers with speakers
- Network connection
- Projector or SmartBoard with speakers
- Scratch programming language -- http://scratch.mit.edu