Unit 6: Diving Deeper

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

Unit Overview

This unit is intended to create a space for reviewing and reflecting on prior work. These activities are designed to be flexible, so that students can dive deeper into creative computing by revisiting challenges, extending skills, or refining practices.

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...

- Create a self-remix of past work
- Design a debugging challenge
- Design an activity or resource for supporting others in learning more about Scratch and computational creativity
- Gain more fluency with computational concepts (events, parallelism, data) and practices (experimenting and iterating, testing and debugging, reusing and remixing, abstracting and modularizing)
- Pursue personal learning interests in a self-directed research activity
- Reflect on past projects and experiences
- Self-asses current knowledge and learning goals

Assessments

- Design Journal (personal reflection and self assessment by student)

Suggested Activities

- Students will complete a KWL chart reflecting on what they have practiced so far in Scratch. Students will share with a peer.
- Students will have self-directed time to re-imagine or extend a past project by creating a self-remix, or revisit and work on a previous unit activity that was either skipped or not completed.
- Students will explore advanced concepts (i.e. video sensing and cloning) through handouts and examples in the Scratch studio. Students can explore the code for these examples, and create a project that experiments with one or more of the advanced concepts.
- Students can create, remix, or re-imagine an activity or resource designed to support others' exploration of creative computing. Students can use the Activity Design handout and look at the studio list for ideas.
- Students can create their own debugging challenges. Bugs can focus on a specific computational concept, Scratch block, interaction, or some other programming challenge. Students can take inspiration from their own experiences of getting stuck and unstuck while developing Scratch projects. Students can challenge other students to fix their buggy programs.

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 can further explore coding in Code.org

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

ELA -- 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
- KWL Chart handout
- Handouts from previous units
- Advanced Concepts studio -- http://scratch.mit.edu/studios/221311
- Video Sensing Handout
- Video Sensing examples studio -- http://scratch.mit.edu/studios/201435
- Cloning Handout
- Cloning examples studio -- http://scratch.mit.edu/studios/201437
- Activity Design Handout
- Scratch Design Studio list -- http://scratch.mit.edu/users/ScratchDesignStudio/
- My Debug It! Handout
- My Debug It! studio -- http://scratch.mit.edu/studios/475637