Unit 3: Animations

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

Unit Overview

Students will be introduced to computational thinking concepts of loops, events, and parallelism. They will become more familiar with the concepts of sequence, and experiment with new blocks in the Events, Control, Sound, and Looks categories.

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...

- Become more familiar with the concept of sequence
- Create an animated music video project
- Define the computational concepts of: loop, events, parallelism
- Define the Scratch key words: control, broadcast, scripts, presentation mode, bitmap, vector, animation, gallery walk
- Differentiate between sprite and costume
- Experiment with new blocks in the Events, Control, Sound, and Looks categories
- Explore various arts-themed Scratch programs

Assessments

- Design Journal (personal reflection and self assessment by student)
- Rubric for Scratch-inspired music video

Suggested Activities

- Students will work in small groups to "act out" a series of instructions in a given Scratch script. This will introduce the concept of events (one thing causing another thing to happen) and parallelism (things happening at the same time) through performance.
- Students will "Build a Band" -- create a program that combines interactive sprites with interesting sounds using the "Build a Band" handout and studio
- Students will complete the "Orange Square, Purple Circle" challenge -- using looks and motion blocks and paint editor.
- "It's Alive" challenge -- students will take an image or photo and make it come alive by adding a sprite, a series of costume changes, animation, and loops. Students should be able to explain the difference between sprites and costumes.
- Students will open the Debug It! program from the Animations Unit Debug It! studio and test and debug at least one challenge.
- Students will create a "Music Video" project that combines animation, music, sprites, and costumes.

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

ELA -- literacy skills involved in reflective journaling

Math -- sequencing and computation

Art -- principles of design

Music -- concepts such as rhythm, tempo, etc.

Resources

- Computers with speakers
- Network connection
- Projector or SmartBoard with speakers
- Scratch programming language -- http://scratch.mit.edu
- Build a Band handout (Creative Computing doc)
- Build a Band studio -- http://scratch.mit.edu/studios/475523
- Orange Square, Purple Circle handout (Creative Computing doc)
- Orange Square, Purple Circle studio -- http://scratch.mit.edu/475527
- Music Video handout (Creative Computing doc)
- Music Video studio -- http://scratch.mit.edu/475517