

## **TECHNOLOGY-9**

### **ESSENTIAL UNIT (E04)**

(Practical Programming)  
(July 2017)

**Unit Statement:** The student will have the opportunity to think creatively, reason systematically, and work collaboratively through the medium of simple programming. Through the use of Scratch, the student will learn how to create their own interactive stories, games, and animations. Additionally, the student will be able to share their creations with the digital community, modify the creations of others, and participate in an online collaborative learning setting.

This unit presumes some familiarity with Scratch, as set out in Technology-8 E04 (Practical Programming). The student can still succeed at this unit without that background, although they will require some extra time to get up to speed.

**Essential Outcomes:** (must be assessed for mastery)

1. The Student Will construct programs that function by using a variety of starting conditions.
2. TSW explore the uses of the repeat function.
3. TSW manipulate colours within a program.
4. TSW experiment with using key presses as a manipulative within a program.
5. TSW synthesize a program utilizing each of the four preceding TSWs.

**Introduced & Practiced Outcomes:**

1. The Student Will share their program to the Scratch community.
2. TSW modify a program created by another community user.

**Suggested Materials/Software:**

[Getting Started Guide](#) - A step by step guide that provides an easy introduction to Scratch.

[Scratch Cards](#) - Cards the demonstrate things you can do in Scratch.

[Creative Computing Lesson Guides](#) - A 154 page document containing lessons, guides, instructions, and tutorials on Scratch.



### **Suggested Websites:**

[Destiny Webpath Express](#) (found on QSI schools Library site)

Use this search engine to find age-appropriate websites that align with this unit.

[Scratch](#) - Scratch's home website.

[Scratch Video Tutorials](#) - Helpful tutorials on various aspects of Scratch.

[ScratchEd](#) - An online community for educators using Scratch.

[Scratch Wiki](#) - A wide variety of articles on Scratch, including advanced topics and tutorials.

[Scratch Offline Editor](#) - An downloadable version of Scratch - useful if your internet is unreliable.

[Scratch and the Physical World](#) - Connecting Scratch to the physical world with MaKey MaKey, LEGO WeDo, or PicoBoard.

[Makeblock](#) - Another way to connect Scratch with the physical world.

### **Suggested Activities, Assessment Tools, & Strategies:**

[Step by Step Intro](#)

[Getting Started Video](#)

Given that students will be creating many artifacts during this unit, assessment should largely be comprised of visual confirmation that their programs work.

*ASSESSMEN RUBRIC FOUND ON FOLLOWING PAGE.....*

**Assessment Rubric - E04 -Practical Programming:**

**Student Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **To**  
**receive a ‘B’ the student must show ‘B’ level mastery on ALL Essential Outcomes. (TSW’s)**  
**To receive an ‘A’, the student must show ‘A’ level mastery on 3 of 5 available and ‘B’ level mastery on all remaining TSW’s.**

<b>TSW</b>	<b>‘A’ Level Mastery</b>	<b>‘B’ Level Mastery</b>	<b>‘P’ Comments</b>
1. <b>The Student Will</b> construct programs that function by using variety of starting conditions.	The student can construct a program with multiple components that activate by a variety of starting conditions.	The student can create a program with components that activate by using a variety of starting conditions.	
2. <b>TSW</b> explore the uses of the repeat function.	The student can include multiple actions that repeat themselves through the use of the repeat block.	The student can create actions that repeat themselves through the use of the repeat block.	
3. <b>TSW</b> manipulate colours within a program.		The student can change colours within a program.	
4. <b>TSW</b> experiment with using key presses as a manipulative within a program.	The student is able to include the ability to use key presses to manipulate the program.	The student is able to include the ability to use key presses to manipulate the program.	
5. <b>TSW</b> synthesize a program utilizing each of the four preceding TSWs.	The student can create a program with at least three elements from each previous TSW with a purpose.	The student can create a program with at least one element from each previous TSW.	