UBC Geering Up Engineering Outreach
Faculty of Applied Science
Geering Up - Room 160, 3800 Westbrook Mall,
Vancouver BC, Canada V6S 2L9

604-822-2858 | workshops.geeringup@ubc.ca | geeringup.apsc.ubc.ca

Super Scratch Coding (4-5)

Hello! This document includes a brief outline of our Super Scratch Coding workshop, as well as relevant BC ADST curriculum connections. In this workshop, students will learn about problem decomposition & how to build a computer program by breaking it down into smaller sections. This will be done by building a maze game using Scratch!

BC Curriculum Ties (In addition to satisfying multiple core competencies)	BC Applied Design, Skills, and Technologies Curriculum Links 4-5:
	
	Designs can be improved with prototyping and testing & The choice of technology and tools depends on the task.
	• *Applied Design:*
	  ○ *Defining – Identify the main objective for the design and any constraints*
	  ○ *Ideating – Generating potential ideas and add to others' ideas, Screen ideas against criteria and constraints, & choosing an idea to pursue.*
	  ○ *Making – Identify use of appropriate tools, technologies, and materials for production, & Making a plan for production and carrying it out, making changes as needed.*
	  ○ *Sharing – Demonstrate their process, using appropriate terminology and providing reasons for methodology, Reflect on their design thinking and processes.*
	• *Applied Skills:*
	  ○ *Use materials, tools, and technologies in a safe manner, and with an awareness of the safety of others, in both physical and digital environments*
	  ○ *Identify and evaluate the skills and skill levels needed, individually or as a group, in relation to a specific task, and develop them as needed*

Grade Levels	4-5
Time	1~1.5 Hours
Goals of the Workshop	1. Expose students to computational thinking – being able to understand and express problems in terms that a computer can understand. 2. Introduce how code and games can be built piece by piece and improved upon using scratch

Activity Descriptions

If/Then Game

Objective: To explain to students the basics of programming & a common conditional coding statement through an interactive game.
Participants will:

- Learn about how an if/then/else statement works by having students complete tasks & move around if a conditional statement applies to them. We'll start simple, then have students move on to kookier tasks!

Instruct & Build – Make your Own Video Game!

Objective: To teach students how to build a functional Scratch game, where students will learn how to use Sprites to create a game of their own!
Participants will:

- Learn about Problem Decomposition & how computer games and programs can be built piece-by-piece to simplify the project.
- Learn the basics of Scratch & how to use conditional statements and other coding ideas to build this game up from scratch.
- Be given opportunities to focus on and improve specific parts of the game based on what they find interesting (Focusing on game aesthetics, focusing on improving current game systems, implementing new game systems, ETC).

We can't wait to connect with your school & expose your students to the STEM field with our exciting, hands-on STEM activities!