



Unit 4: **Loops**

Teacher's Guide & Lesson Plans

Overview

A loop can be used to animate a sprite by repeating a sequence of instructions. In this module, students will learn by playing Scratch Charades, to introduce the use of loops in block-based programming, then modify a project to animate a sprite by switching costumes or moving to the next costume along with a repeated step movement. Finally, they will plan and build their own animated project. Wait blocks will be included to increase or decrease the speed of the animation.

In this unit, students will be able to:

CS Theoretical Learning Objectives

- Define Loop.
- Animate a sprite using a repeat loop.
- Use multiple actions in a repeat loop.
- Compare scripts with and without loops to evaluate similarity.

Scratch-based Learning Objectives

- Copy a script from one sprite to another.
- Import an image from the Internet into Scratch.
- Make a sprite move repeatedly using a Repeat block.

[CSTA, ISTE, and CCSS ELD Standards](#)

Vocabulary Terms

loop: a sequence of instructions that is repeated

How are “**loops**” tied to big ideas in Computer Science?

Loops are critical aspects of computing. It is simple to think of repeating a single block. However, most loops repeat a sequence of actions. Animation in Scratch is a fun, engaging way to practice this concept. An important aspect of animation is the wait block - controlling the speed of the animation.

Unit Walk-Through

Lesson 4.1: Intro to Loops (50 minutes)	Lesson 4.2: Exploring Loops with TIPP&SEE (50 minutes)	Lesson 4.3: Dance Party: Plan (50 minutes)	Lesson 4.4: Dance Party: Build (50 minutes)	Lesson 4.5: Project Share Out & Reflection (50 minutes)
Students play an unplugged game, Scratch Charades, to introduce themselves to using Scratch loop blocks in scripts.	Students modify a Scratch project to animate animals in a parade using loops.	Students explore through a Dance Party project using loops. Students will plan what they want their sprites to do before building their project.	Students will build their Dance Party project.	Students reflect on their own Dance Party projects, then share their projects with a partner.