Lesson 7 Read Loops 2



Overview

Students practice reading code by predicting and stepping through the code of enemies 1-3 in the maze game. Enemies have repeating behavior so students will have to be comfortable reading code that has loops.



Objectives

• I can step through and act out code that contains a loop.

- I can predict the effects of code that contains a loop.
- I can summarize what a section of code does on the stage.



Agenda

Small Group: (20 min)

1. Engage: Super Mario (5 min)

2. Elaborate: Stepping Through Loops (10 min)

3. Evaluate: Salsa Practice (5 min)

Independent Coding Practice: (20 min) Code.org Course 2 Stage 8: Bee Loops



Materials

Teacher Materials:

Lesson 7 Slides

Projector

Unplugged Platform

Piece of Paper

Student Materials:

Index cards (1 per student)

Idea Journals

Pencils

Dry erase markers (1/2 class set)

Handout: Maze (1/2 class set)

Enemies Character (1/2 class set)

Salsa Cards

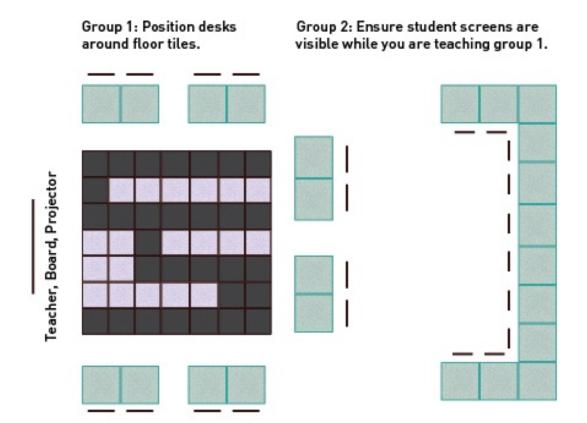
Computers



${\sf Vocabulary}$

- Loop: A sequence
 of instructions that is
 continually repeated
 until a certain
 condition is
 reached.
- For-Loop: A type of loop that specifies the number of times to repeat the nested sequence of instructions.

Room Design



```
Symbols Key
```

help question

check_circle answer

action item

Engage: Super Mario (5 min)

Unearth loops in examples of video games: Students turn to the next blank page in their idea journal and title it Loops. Play the Super Mario Bros. video and have students create a list of examples of actions that may be coded as a loop in the video game.

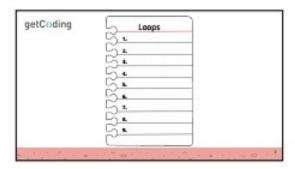
vpn_key

Key Points

Loops allow us to repeat sequences without having to write out the entire sequence multiple times.

Think Pair Share: Students share their list of loops.

Slides:





Elaborate: Support Stepping Through Loops: (10 min)

Show students the code for Enemy 1.

```
help
What do you predict this code will do?
check_circle
Answers will vary
```

lightbulb_outline

tip

The "Wait 1 secs" block is necessary in Scratch to be able to see the Sprite's movement. When acting out the code, students can pause for one second every time they see this block.

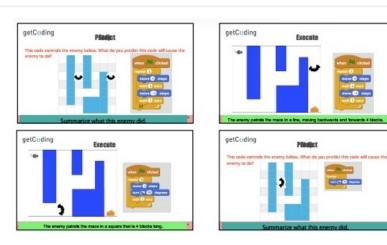
Step through the code using the strategy from lesson 6:

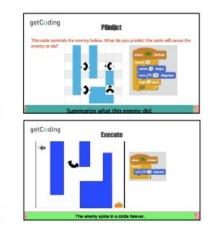
- Demonstrate uncovering each line one at a time using a sheet of paper (students use an index card).
- Make a mark at the end of the sequence each time you complete a loop.

For grades proficient in writing: Students write a sentence summary in their idea journals of each enemy's movements.

Repeat this process for Enemies 2 & 3.

Slides:





Evaluate: Salsa Practice (5 min)

In pairs students predict and step through the code from one of the four cards.

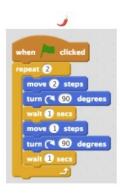
lightbulb_outline

tip

The chili peppers represent the level of difficulty of a card. Four peppers is the most challenging.

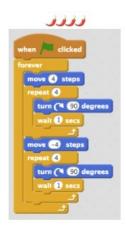
Observe student work to evaluate how comfortable students are reading loops.

Encourage pairs that finish early to try a more challenging card.









This enemy moves in a rectangle once.

This enemy moves back and forth 8 times, changing costume at the end of each set of steps.

This enemy moves back and forth forever, spinning in a complete circle at the end of each set of steps.

This enemy moves back and forth forever, spinning in a complete circle at the end of each set of steps. This is the same as the 3-chili pepper problem, but with nested loops.

Slides:





