Lesson 4.3, 4.4: Software Development Life Cycle - The Implementation and Testing Phase

Objectives

In this lesson, students will:
- ❖ Practice writing a program from their design documentation
- ❖ Practice writing test cases
- ❖ Work with a partner on a large project spanning multiple sessions

Agenda

1. Lesson 4.3 - Coding	50 mins
2. Lesson 4.4 - Test Cases	10 mins
3. Lesson 4.4 - Coding	30 mins
4. Wrap Up and Reflections	10 mins

Preparation

- ❏ Print student activity worksheet, one per student pair

Resources & Links

- ❏ None

1. The Implementation Phase (Coding)

1.1 Lesson 4.3: Coding:

In this lesson students will code the game from their design. Remind them to code a game they know how to code in Scratch and can complete in time.   Students are free to explore prior games they have coded, but they should not be remixing other Scratch community projects.

1.2 Lesson 4.4: Test Cases and Coding

Test Cases Overview

Before students continue coding their game, students will write 3 test cases for their game.   At this juncture students have implemented enough of their game to come up with a few test cases.   These test cases will be run by other students during the testing and feedback lesson. During software development, a test plan is typically written from a design specification (description). However, students may not know enough about their game from just the design notes to write test cases, hence they are given a chance to write some code before writing test cases.

Student Activity: Write Test Cases

Explain the activity to students and distribute the activity worksheet. Do not disclose yet that the test cases will be run by another team.

Instructions to give to students:

1. On the activity worksheet, write the name of your game and the name of each member of the team

2. Write 3 test cases to test your game once you have finished coding it.   You want your game to work well so think of tricky things to test.

3. Use your activity worksheet to write down your test cases. Remember to be specific and say what you will test and how to test it.

4. Do not write anything in the **Bugs Found** section.

Coding

Once students have written their test cases, collect the worksheets and save them for the testing lesson. Students continue coding their game. Let them know that they need to finish their game during this lesson.

2. Wrap Up and Reflections

> **Reflection Points:**
>
> - What was difficult in the coding of your game? How did you address the challenges?
> - Did your design have enough details to start coding your game?
> - Did you have to change your game from the original design?
> - Do you have new ideas for your game?

Student Activity Worksheet: Writing Test Cases

Name of your game:_____

Authors: _____

_____

1) **Test What**: _____

   Test How: _____

   _____

   Bugs Found: _____

   _____

2) **Test What**: _____

   Test How: _____

   _____

   Bugs Found: _____

   _____

3) **Test What**: _____

   Test How: _____

   _____

   Bugs Found: _____

   _____