Lesson 5.2: Flying Dragon - Part 2

Objectives

In this lesson, students will:

- Practice building a program by experimenting and iterating.
- Learn about keeping score using variables.
- Practice using programmatic constructs such as conditionals, loops, comments, random numbers, testing and code-reuse.

Preparation

- ❑ Projector to demo game and code if needed
- ❑ Print student activity worksheet (one per student pair)

Agenda

1. Flying Dragon Review	10 mins
2. Adding the Score	10 mins
3. Student Activity: Adding the Score	20 mins
4. Wrap Up and Reflections	10 mins

Resources & Links

- ❑ Flying Dragon Solution Project: https://scratch.mit.edu/projects/282848597

1. Flying Dragon Review

In the last lesson students coded the rainbow and star treasures and you explained the dragon and cloud scripts.

Prompt students: What is missing to complete the basic game ? It could be any number of things. The feature we will be adding in this lesson is the scoring for the game.

If necessary, demonstrate the game again or simply review what students did last lesson and explain what is missing.

If there are teams that were not able to finish the last activity, you can give them some time at this point, or they can finish the last activity during the activity time for this lesson.

2. Adding the Score

Engage students in a brief interactive discussion:

What do we need to keep score in our game? **Answer**: a variable.

Why do we want to add scoring for the game? Possible answers: make it more interesting, keep track of how well the player did, and because the demo game has it :-).

What is a variable? Answer: A variable is a placeholder in the computer's memory to keep track of numbers, text, pictures and more. In Scratch variables can save the value of numbers and text.

There are 3 ways the score changes in our game:

1. The dragon captured (touched) a rainbow. When this happens, increase the score by 2 or any other number you want.

2. The dragon captures a star. This is super special, increase the score by more than a rainbow.

3. The dragon touches a red wall. This is not good, the user loses points. Decrease the score by some amount.

3. Student Activity: Adding the Score

In this activity, students add the score and the various ways in which the user either scores points or loses points.

Explain the activity to students and distribute one worksheet to the same pairs as the last activity.

4. Wrap Up and Reflections

Reflection Points:

- What did you learn today?
- What did you like about today's activity?
- What other features were you able to add to the game?
- When and why does the score need to be initialized to 0?

Student Activity Worksheet: Adding the Score

Take turns being the driver with your partner. The navigator can help read the instructions.

What to do:

- ❑ In your Scratch account, open your flying dragon game.
- ❑ Create a variable for the score. 

- ❑ You need to initialize it to 0 when the game starts (when green flag clicked).

  Discuss with your partner:

  Which sprite will you use to initialize the score? Did you create a variable for all sprites?

- ❑ There are 3 ways the user of the game either scores points or loses points:

  1. The dragon captured (touched) a rainbow. When this happens, increase the score by 2 or any other number you want. 
  2. The dragon captures a star. This is super special, increase the score by more than a rainbow. 
  3. The dragon touches a red wall. This is not good, the user loses points. Decrease the score by some amount. 

- ❑ What other cool things can you add to your game ?
  a. Perhaps change the background
  b. Add another treasure
  c. Add number of lives (another variable). Instead of losing points, each time the dragon touches the red wall, it loses a life.