An Interactive Introduction to Recursion and the Fibonacci Sequence

From playful steps to profound patterns, Ducki and Dio show how simple choices lead to Fibonacci's wonder!

Setting: Classroom

Participants: Grades 4–6 students

Format: Interactive whiteboard activity with puppets

Workshop Structure:

Two puppets, Ducki the duck and Dio the dinosaur, guide an engaging activity exploring mathematical patterns. A row of numbered stickers is placed on a whiteboard, representing steps from start to goal.

The Challenge:

Dio tries to reach Ducki by jumping across the stickers. The students must figure out how many different paths Dino can take, based on the jumping rules in each episode.

Three Movement Scenarios:

Episode 1: Dio may only jump to the next spot.
Episode 2: Dio may only jump to the spot two steps ahead.
Episode 3: Dio may jump to either the next spot or the one two steps ahead.

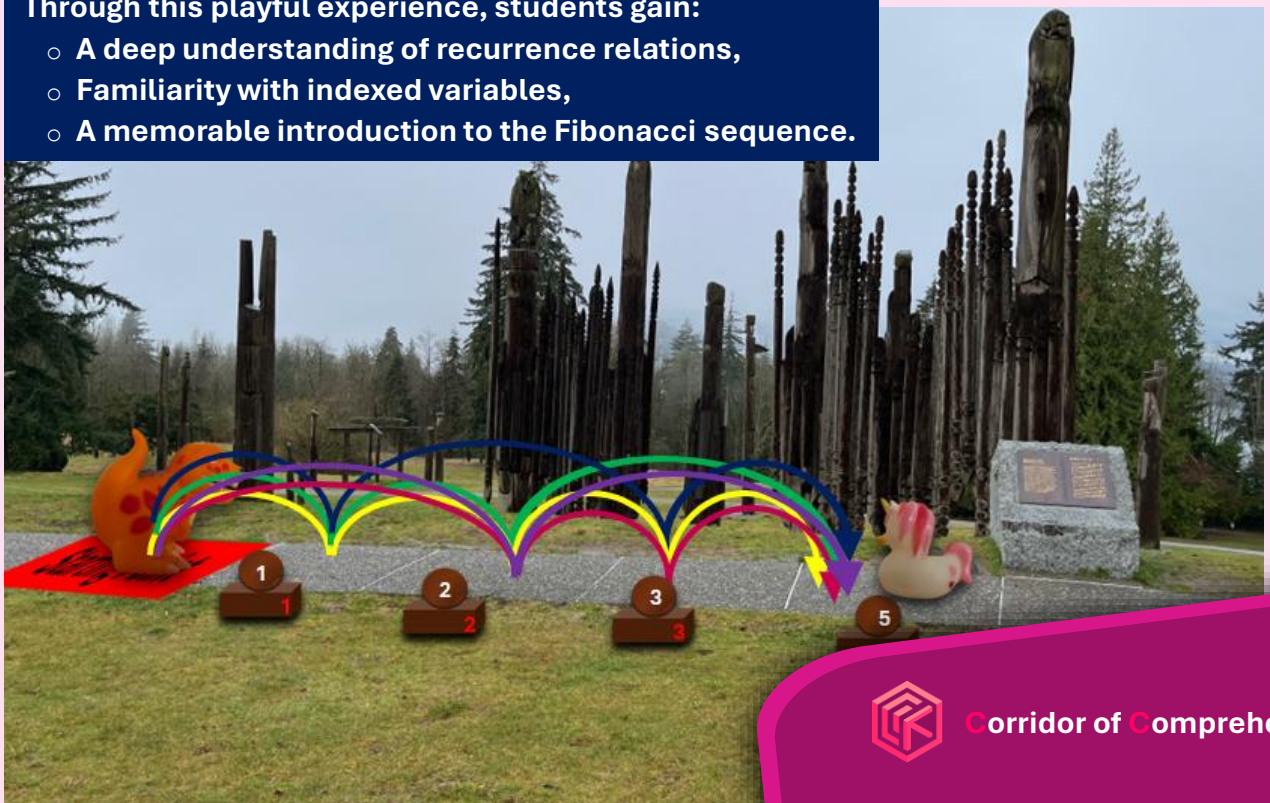
Mathematical Discovery:

In episode 3, students notice that the number of ways Dio can reach Ducki grows in a special pattern: 1, 2, 3, 5, 8, ... This is the famous Fibonacci sequence.

Learning Outcomes:

Through this playful experience, students gain:

- A deep understanding of recurrence relations,
- Familiarity with indexed variables,
- A memorable introduction to the Fibonacci sequence.



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