LESSON PLAN – Computer Programming

Title: Hobbits vs. Nazgul – Prey Start

Essential Questions	Can we model life-like behavior with Python? How can we apply our expanded understanding of data types and storage?

Learning Objectives:	Students will be able to create functions to: ● Check for open spaces, allowing for hobbit teleportation ● Choose a space to move to ● Move to a new space

Standards (CSDF)	
9-12.CT.4	Implement a program using a combination of student-defined and third-party functions to organize the computation.
9-12.CT.5	Modify a function or procedure in a program to perform its computation in a different way over the same inputs, while preserving the result of the overall program.
9-12.CT.7	Design or remix a program that utilizes a data structure to maintain changes to related pieces of data.
9-12.CT.8	Develop a program that effectively uses control structures in order to create a computer program for practical intent, personal expression, or to address a societal issue.
9-12.CT.9	Systematically test and refine programs using a range of test cases, based on anticipating common errors and user behavior.
9-12.CT.10	Collaboratively design and develop a program or computation artifact for a specific audience and create documentation outlining implementation features to inform collaborators and users.

Teaching Materials:
Student handouts (attached)
Student computers

Procedure:

I. Checklist from previous day
   A. Confirm that previous day's tasks are complete
   B. Adjust plan to allow for time outside of class if progress is an issue
II. Division of labor
   A. Students will decide who will work on what portion of the code
      1. Checking for open spaces (must allow for hobbit teleportation)
      2. Choosing an open space to move to
      3. Move
   B. Students will likely need to collaborate on this code, as some parts will be logically complex
   C. Students may choose to subdivide the above tasks into separate functions
III. Student work time

Day 3 Checklist:

Develop the prey (hobbit) movement basics

You must have the following tasks accomplished before the end of class today.

Accomplished	Task
●	Make sure you have completed all of the tasks from yesterday's (Day 2) checklist Do you need to schedule time outside of class in case progress is an issue? Discuss with your team.
●	Division of labor and assignment of tasks. • **Who works on what?** • **Again, who should take on what responsibilities unless that/those person(s) are out for the day?** • **What needs to happen if a team member is stuck or becomes frustrated?** Each students should expect to complete at least of one of the following below: • Check for open spaces (coding logic must allow for hobbit teleportation) • Logic that decides which space to move to • Moving *Collaboration is encouraged if the team feels it*

	necessary to be successful.
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