AGE RANGE

11-13

LESSON TYPE

Text-based

REQUIREMENTS

- Computer with internet access
- Access to Trinket.io

INTERACTIVE FICTION WITH PYTHON

Nicholas Provenzano explains how he introduced Python to students in his literature class, bridging computer science and literacy

Literature classes seem like the last place you would find students coding, but interactive fiction has been around for decades. Students love to play computer games, and the very best games have amazing stories. This project will allow students to create their own piece of fiction and then use Python to turn it into a text-based computer game. Students will have a chance to create their own hero and monsters, treasures and traps and so much more while being introduced to Python. Students that love to write, and students that love to code, will love this lesson.

> A WAY TO BRING CODING TO A LITERATURE CLASS

A 12-year-old student works on her story in her literature class

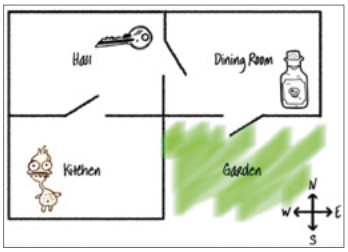
I've been thinking a lot recently about to ways to bring computer science into the literature classroom. I set out exploring the Raspberry Pi projects page, where I saw a project that allowed the user to create their own text-based computer game using Python. I thought this would be a great way to engage students in reading, writing, and programming.

Students create their own piece of fiction and then use their stories to create an amazing text-based computer game based on the role-playing game (RPG) tutorial from Raspberry Pi: **helloworld.cc/rpg**. From the first day working on this project, my students fell in love with the writing and the coding. They couldn't wait to create their game and share them with their friends.

The project is best introduced with a focus on creative writing, where students should create an outline for their own adventure story. With that in hand, introduce the students to the Raspberry Pi RPG tutorial. It is much easier for students to create their game if they draw out the rooms on paper to help them visualise the game they're creating. The more time they are given to create their game, the more complex it can become. Students will be able to fully explore the code while creating a fun game they can share with others.

This project is the perfect way to bring coding to a literature class. Students that love to write will be introduced to text-based programming, while students that love to code will have an opportunity to explore fiction through their own writing.

My students were excited to spend their time creating a complex story, and an even more complex game to challenge their friends and their teacher. Students who struggled with the code were helped by other students who'd already moved ahead. We spent a week on this project, but you could spend



Students design their own mazes for their characters to move through

longer, depending on the breadth of the stories and games. Watching students use their critical thinking skills to plan out a maze for their players was great to see.

The best part was watching students who do not normally engage in reading and writing lessons become leaders as they embraced the coding and were excited to turn their story into a game and share it with everyone. This project will become a mainstay in my teaching for years to come. (HW)

THE CHALLENGE

- Introduce students to short adventure stories
- Have students start to formulate a rough outline for their very own adventure story. Make sure that the stories have the following elements:
  - A protagonist
  - An antagonist
  - A special item
  - A happy ending
- Once the students have their stories, introduce them to the RPG tutorial from Raspberry Pi
- When the students open their Trinket page, make sure to have them create an account and save their work. They can lose their work if they do not create an account and save
- Students will need to spend a couple of days working on the tutorial
- They will be tempted to go off-script and create their own game as they do the tutorial, but it is important for them to complete the tutorial before creating their own game
- The most common errors the students will make will have to do with missed commas, quote marks, and incorrect indentation
- Once the students have finished the tutorial, they should start to create their own game that includes the following:
  - Six rooms
  - Three items to pick up
  - A way to lose
  - A way to win
- Students can be given a few hours of lesson time to complete their games
- Once the students have completed their games, they should share them with others

ASSESSMENT

- How are players able to move to different rooms?
- How would you add stairs to the game?
- What was a common error you encountered?

NICHOLAS PROVENZANO

(@thenerdyteacher) is a Makerspace Director at University Liggett School in Michigan. He is also an author, international speaker and consultant. Nicholas is a Google Certified Innovator, ASCD Emerging Leader, Raspberry Pi Certified Educator, Adobe Education Leader and a TEDEd Innovative Educator. His best-selling books, *Your Starter Guide to Makerspaces*, and *The Maker Mentality*, are read by educators around the world.

ALTERNATIVE ACTIVITY IDEAS

One of the great things about this project is that it can be used by many different age groups. Here are some ideas on how to bring this lesson to more students.

14-19 years - Text-based programming

- Students add different levels to their game
- The older the students, the more complex the stories can be

FURTHER READING

- RPG project from Raspberry Pi: helloworld.cc/rpg
- Example RPG game: helloworld.cc/rpg_trinket
- Nicholas's game: helloworld.cc/werewolf
- Text adventure games for inspiration: textadventures.co.uk