



Long Activity
Ages 9–12
30 minutes

Coding Fairy Tale Mazes

Description

Learn the basics of coding language while manoeuvring a character through various mazes inspired by fairy tales. Participants can also try out their new coding skills on a computer or tablet.

Space Considerations

Participants will need access to tables and enough space to spread out the coding printouts. If the computer-coding portion of this activity is included, all participants will also need access to a computer or tablet (individually or shared in small groups).

Competencies

- Computer literacy
- Logic and sequencing
- Problem solving
- Understanding cause-and-effect relationships

Materials

- Paper for printing fairy-tale maze templates
- Paper for printing coding commands
- Computers or tablets (optional)
- Scissors (staff use only)
- Characters (small toys or figurines similar in size to a LEGO minifigure), or paper printouts of small characters (one per participant)
- Pencils

Preparation

- Print several copies of the coding commands, about one copy for every two participants
- Separate all of the coding commands by cutting them with scissors

- Print the fairy-tales mazes, one set for each participant

Implementation

Maze 1

1. Hand out Maze 1
 - a. Introduce the concept of "sequence":
 - i. Code must be written in a specific order called a sequence
 - ii. Just like a story would not make sense if the sentences were rearranged in the wrong order, code will not work if it is written in the wrong sequence
 - b. Hand out the following pre-cut coding instructions: *Go Forward, Turn Right, Turn Left, End*
 - c. Participants need to create a long list of the instructions that they think the character needs to follow to reach the end of the maze
 - d. The character must avoid the obstacles and dead ends, and must stay on the white squares
 - e. Once participants have organized their list from top (first command) to bottom (final command, or *End*), place the character on the start square
 - f. Another participant, staff or a caregiver can check the code by moving the character and following the instructions in the list
 - i. Flip over each command as it is completed
 - ii. Participants can make corrections as needed; young children often need corrections on left and right turns, as they must think about the turns from the character's perspective

Maze 2

2. Hand out Maze 2
 - a. We are still working with the same coding commands (*Go Forward, Turn Right, Turn Left, End*), but now our character must pick up a basket of treats before making their way to the end of the maze; they must get the basket, turn around (hint: two left or right turns in a row will have the character facing the opposite, correct direction), and then make their way to the end of the maze, avoiding the obstacles on the way
 - b. Once participants have organized their list from top (first command) to bottom (final command), place the character on the start square
 - c. Another participant, staff or a caregiver can check the code by moving the character and following the instructions in the list
 - i. Flip over each command as it is completed

- ii. Participants can make corrections as needed

Maze 3

3. Hand out Maze 3
 - a. Introduce the concept of "loops":
 - i. This is when you want to repeat steps in a sequence
 - ii. Rather than piecing together three separate "move forward" commands, participants can learn to use the code "for ____ steps, move forward," filling in the blank space with the amount of steps needed
 - b. Hand out a pencil and the following pre-cut coding instructions: *Go Forward, Turn Right, Turn Left, For ____ Steps, End*
 - c. Participants need to create a long list of the instructions that they think the character needs to reach the end of the maze
 - i. It is a good habit to start indenting the line of code underneath the loops; this is required by some computer-coding languages, and it also makes the language much more readable
 - d. Once participants have organized their list from top (first command) to bottom (final command), place the character on the start square
 - e. Another participant, staff or a caregiver can check the code by moving the character and following the instructions in the list
 - i. Flip over each command as it is completed
 - ii. Participants can make corrections as needed

Maze 4

4. Hand out Maze 4
 - a. We are using the same commands as Maze 3 (*Go Forward, Turn Right, Turn Left, For ____ Steps, End*), but now while our character needs to pick up a basket of treats before making their way to the end of the maze, they must avoid obstacles to go and get the basket, turn around (hint: two left or right turns in a row will have the character facing the opposite, correct direction), and then make their way to the end of the maze
 - b. Once participants have organized their list from top (first command) to bottom (final command), place the character at the start box
 - c. Another participant, staff or a caregiver can check the code by moving the character and following the instructions in the list
 - i. Flip over each command as it is completed
 - ii. Participants can make corrections as needed

If you have access to computers or tablets for the program, or if you would like to encourage participants to practice their coding after the program, try out the excellent coding website [Run Marco](#), a free online game that builds coding skills

Accessibility Considerations

- We have included a variety of levels for the mazes (fewer coding commands needed)
- Read out and explain all of the coding commands for the participants before the program
- On the [Hour of Code website](#), there is an option for participants to see the instructions in larger font as well as to have the instructions read out to them; see the top-right corner of the screen for these options
- If available, offer participants an accessible computer space with a mouse and a larger screen; if using a tablet, instruct participants how they can adjust the zoom of the screen if possible
- There are a number of free, accessible websites that participants may also check out:
 - Code.org
 - Code Monster
 - Scratch

Book Suggestions

The Book of Mythical Beasts and Magical Creatures by Stephen Krensky and Pham Quang Phuc

This Is the Path the Wolf Took by Laura Farina and Elina Ellis

Download Links

[Fairy tale mazes](#)

[Coding commands](#)