Daisy Coding for Good 2: Digital Game Design

Pillar: STEM
Outcomes: Strong Sense of Self

Playing video games is fun, it can also help you learn new things or make the world a better place. Programmers use algorithms and sequences to make games for computers. Explore the world of digital game design and design your own maze game. Please make sure you've finished your Daisy Coding Basics badge *before* you work on this badge!

Daisies will earn their badge by:

1) Explore tools used to develop digital games
   a) Watch this video to understand more about **computers**. How do you or your family members use computers?
   b) A **digital game** is a software program on a computer. When you create digital games, you decide what challenges players face, what they can do, and then you write **code,** or instructions, so the computer can run the game. What electronic devices do you and your family members like to use? What digital games do you enjoy playing? Do you play with other people?
   c) Every game has rules. The rules in digital games are called **algorithms**, a detailed, step-by-step process followed in order to complete a specific task or to solve a specific problem. Keep this in mind for when you create your own game later!
2) Plan a maze game
   a) Before a game is created, the creator used their imagination to begin **brainstorming**, a time used to produce ideas or solve problems. First you think about what you want to create and what it will look like. Then you plan the steps to take to create the game and test them out. It's ok if you make mistakes and need to change some of the steps! Watch this video to learn more about how to brainstorm and write steps.
   b) Click on this link to play a virtual maze game. You will need to use your mouse to click on the screen where you want the rocketship to move. Go step by step throughout the maze to the finish line – earth!
   c) To print or replicate a maze game, click on this link.
   d) Now that you know what a maze game looks like and how it works, it is time for you to create your own! Your game can take the form of a life size maze, a drawing or an interactive game with different pieces. Decide the character you want to move through the maze, what obstacles are in the maze (called **blockades** or **power-ups**) and what is waiting for the character at the end! Check out this link for an example of how to create a maze with tape on your floor.
3) Build, test and improve your maze game
   a) Use the maze game ideas you brainstormed in step 2 to build your maze game! Once it is built, test it out yourself and have others in your household try it. What do they think of the game?
   b) **Iteration** is the process of adding and changing parts of a program to make it better. The more you test your maze, the more you will see what you can add to it! When programmers create games, they test it out to see if there are things they can fix, make it more challenging or more fun! Is there anything you would like to change about your game?

When you're finished: Congratulations, you have earned your badge! You can purchase by emailing shopdept@gsksmo.org or at https://www.girlscoutshop.com/daisy-digital-game-design-badge

No shipping charges apply at this time.