WisCode Literati
DREAM BIG. LEARN CODE.

NO TECH

Program Kit

At WisCode Literati, we believe that teaching our communities how to code is essential for the future! Learning to code allows individuals to interact and compete in a highly digital society by teaching computational thinking, critical decision-making, experimentation, troubleshooting, and cause and effect.

We offer various kits and resources to help librarians and educators offer coding and problem-solving programs to their communities. WisCode Literati was started by a group of librarians interested in problem solving, technology, and learning.

Tabletop Coding

This kit helps youth to understand how coding works. They will move a game piece across a grid game board by randomly pulling code "instructions" from a deck, then organize the deck so the piece will move in a particular path.

Why?

Youth will learn how code provides instructions for a program and how coders create and organize those instructions to achieve a specific goal.

Who?

This activity is for youth grades 2 through 6. The activity can be completed by one child; small groups around a single board; or multiple groups each with their own board. A single instructor should be sufficient.

What?

1 grid game board (like from a checkers or chess game)
2 different game pieces (could be coins, tokens, or pieces from an actual board game)
20 index cards to make a code deck with prepared "code" instructions (3 cards should read X=+1; 3 cards should read X=-1; 3 cards should read Y=+1; 3 cards should read Y=-1; 2 cards should read X=+2; 2 cards should read X=-2; 2 cards should ready Y=+2; 2 cards should read Y=-2)

1 sticky note to indicate the X axis of the board
1 sticky note to indicate the Y axis of the board
Additional small objects to serve as barriers on the game board (for a more challenging board)

How?

Set out the game board with the sticky notes indicating the X and Y axes. Randomly place the two game pieces on squares of the board. Choose one game piece to be the "player," or the one that will move according to the code deck. The other piece is the "trophy," which identifies the square on the board the player aims to reach.

Shuffle the code deck. Instruct the child playing the game to turn over the first card in the code deck, then move the player piece according to the instructions on the card. For example, if the card reads X=+1, the player piece should move rightward on the board 1 space. The child should continue to turn over cards in the code deck one at a time, moving the player piece according to the instructions on each card. Encourage players to think about how the random order of the code deck means the player piece may not reach the trophy, or may reach it through a circuitous route.

Randomly replace the player piece and trophy on the board. Allow the child playing the game to see the cards in the code deck. Encourage the child to choose cards they want and to order them so that their player piece can make a quick route to the trophy. Repeat this process several times, changing the starting positions of the player piece and trophy each time, until the child has a solid grasp of choosing and ordering instructions, that is, coding.

For the additional challenge, place several small objects on random squares on the game board; these squares are now off limits for the player piece. Challenge the youth playing the game to choose instructions and order their deck to allow the player piece to reach the trophy while circumventing the barriers.

Optional: For youth who feel extremely confident at this type of coding, offer timed trials and friendly competition to encourage quick coding.

Extras

The attached photo shows a sample of how the game can be set up, with the pawn as player piece and queen as trophy.

Contributor

This kit was created by Amy Koester, Youth & Family Program Coordinator, Skokie (IL) Public Library.