Children’s Technology Program Plan

Grade Level: K-5 Theme: Computer Coding

Program Objective:
Children will learn the concepts of basic computer coding by completing a simple maze and using iPad apps.

Materials: iPads, mazes, pencils
iPad App(s) Information: Daisy the Dinosaur & Hopscotch
Description:
Both apps introduce basic computer coding to children.
Staff Review:
Daisy: This easy-to-use app introduces basic computer coding to children. It’s very easy to use, and I had a lot of success with kids in K-5 using it. They get to experiment and troubleshoot, so this requires some scaffolding for the younger children.
Hopscotch: This app builds off skills learned in Daisy the Dinosaur. Kids can program different creatures to move across the screen. This is best for grade 3-5 though younger children can use it with assistance. Children love this app.

Instructions for use:
Experiment with apps before session. Use the Challenge Mode in Daisy the Dinosaur to walk participants through progressively more difficult coding. Next, introduce Hopscotch.

Sequence of Events: Introduction, primary activity, secondary activity, evaluation

1. Introduction: Explanation of Computer Coding/Programming
Ask the following discussion questions (with talking points):

- How do we communicate/get thoughts and ideas across to other people?
  - Through language/talking.
- How do computers know what to do?
  - **Computer programmers** tell them what to do, also through language. This is called **coding** (or writing code) and the language is called **code**.
  - Computers cannot think on their own so programmers must tell them what to do. Whenever you open a file on the computer or watch an animated video, computer programmers told the computer how to do those things.
  - There are multiple computer languages (*show example of code*), but today we will be learning to code, or tell computers what to do, very simply.
2. *Primary Activity: Computer Programmer Maze*
Materials: mazes, pencils (one maze/student; one pencil/pair)

Instructions:
Break students into pairs. One student will be the programmer and one student will be the computer. Hand out one maze to each student. The objective will be for the programmer to guide the computer through the maze.

- The computer will close its eyes and the programmer will place the computer’s pencil on the beginning of the maze.
- The programmer will verbally guide the computer’s hand (holding pencil) from start to finish (without touching the computer).
- See if the programmer can direct the computer to the finish line.
- Have students switch roles.

3. *Secondary Activity: Daisy the Dinosaur app and Hopscotch app*
Materials: iPads

Instructions:
Explain how *Daisy the Dinosaur* works and that our goal is to move Daisy through a series of commands to touch the star on the other side of the screen. Show an example of inputting the first command (dragging the command, then pressing play). Remind participants that this app is about experimentation and figuring out what works through trying different things. Encourage them to explore. Hand out iPads and instruct participants to choose “Challenge Mode.” Have them complete the challenges before they move onto the next app.

When participants are finished with *Daisy the Dinosaur*, move on to using *Hopscotch*. Show participants how to drag commands from the menu on the left, then to press play to make their characters move. Demonstrate several different commands. Explain that this app is also about experimentation and seeing what they can create. Let participants experiment; walk around to assist as necessary.

*PA Academic Standards*

*3rd grade Science, Technology and Engineering Standards:*
S3.4.3.A1, S3.4.3.A3, S3.4.3.C1, S3.4.3.D2, S3.4.3.E4