Unit 0: Coding Unplugged

Activity 3: Hide & Seek

Intro and Discussion Points:

As discussed in the PB&J challenge, computers can only follow instructions EXACTLY. In this lesson, students will work with a partner. One will act as the programmer and the other as the computer.

Preparation and Materials:
- [Flowchart poster](#)
- A classroom, hallway, or gymnasium with tiles (grid)
- Objects such as Happy Meal toys, matchbox cars, etc. that are small enough to easily place on the floor.

Timeframe:

1 class period

Student Learning Targets:
- I can write an algorithm in steps and/or as a flowchart.
- I can follow an algorithm written in steps and/or as a flowchart.
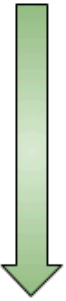
Project Goals:
- ➢ Understand and use the term algorithm.
- ➢ Understand that a computer is not "intelligent" and will only do EXACTLY what you tell it to do.
- ➢ Write repeatable instructions that another user can understand and execute.
- ➢ Use flowcharting to write an algorithm.

Lesson Sequence:
- ➔ Pair students up, and assign one to be the programmer and one to be the computer.
- ➔ The programmer will choose a toy and place it somewhere in the room.
- ➔ From an assigned starting point, the programmer will use the commands move forward, turn left, and turn right to lead the computer to their toy. (Note- turn means turn IN PLACE, not turn and take a step left or right.)
- ➔ The programmer will hand their program to the computer, who will follow the steps. Together, the programmer and computer can debug and reset.
- ➔ Swap roles.
- ➔ Introduce the term "flowchart" as a documentation and planning process. (Clip: [The Friendship Algorithm](#) from *The Big Bang Theory*). Discuss and have students copy the basic flowcharting symbols from the poster, or give them a copy for their notebooks. (Note- there are more symbols for more advanced programs, but these are a good place to start.)
- ➔ Have students repeat the process, but use a flowchart instead of list.
- ➔ Review the terms algorithm, debug, and flowcharting symbols.

Symbol	Name	Function
	Start/End	An oval represents the starting or ending point.
	Arrow	An arrow is a connector that represents relationships and the flow from one shape to the next.
	Input/Output	A parallelogram represents an input or output.
	Process	A rectangle represents a process.
	Decision	A diamond indicates a decision.