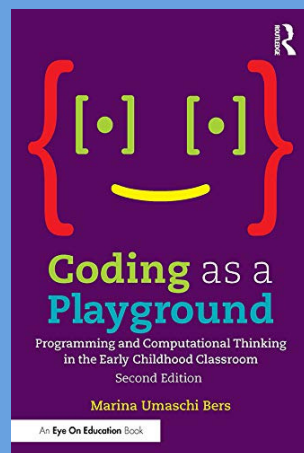


# CODING STAGES

Tips for Families to understand your young child's progress learning to code



**Coding as a Playground**  
(2nd edition)  
by Marina Umaschi Bers

## AT EACH STAGE, YOUR CHILD...

### 1 EMERGENT

- Knows how to turn the tool on and off
- Knows that technology is not alive, and is programmed by a human.
- Knows that a command represents a behavior.
- Knows that a basic control structure exists



### CODING AND DECODING 2



- Can create simple programs with cause and effect commands.
- Engages in goal oriented command exploration.
- Debugs simple problems through trial and error.
- Can identify and fix grammatical errors in the code.

### 3 FLUENCY

- Is personally motivated to create complex programs using control structures, like Repeat loops and "If / Then" statements.
- Can correctly create complex programs using control structures.
- Is beginning to be strategic with how they debug.
- Can distinguish and fix logical errors in the code.



### NEW KNOWLEDGE 4

- Engages in more goal oriented logical exploration with their programs.
- Is motivated to create programs with nested loops to achieve complex sequences.
- Can correctly create nested programs to achieve complex sequencing.
- Child is strategic with how they debug.

### 5 MULTIPLE PERSPECTIVES

- Can create programs that involve user's input.
- Can create multiple programs that interact with one another.
- Is beginning to analyze, synthesize, and translate abstract concepts into code.
- Can debug multiple control structures.



### PURPOSEFULNESS 6

- Is personally motivated to create complex programs.
- Can analyze, synthesize, and translate abstract concepts into code.
- Can translating abstract concepts into code, and back into concepts.
- Can identify multiple ways to translate abstract concepts into code.

## CONNECT FOR MORE CODING IDEAS!



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More on Coding Stages: Bers, M. U. (2019). *Coding as another language: a pedagogical approach for teaching computer science in early childhood*. *Journal of Computers in Education*, 6(4), 499-528.