

Essential Skills for Standard: Algorithms & Programming: Control

Grade	Standards: AP.C.01	Essential Skills
K	With guidance, create a set of instructions (programs) to accomplish a task using a programming language , device , or unplugged activity, including sequencing, emphasizing the beginning, middle, and end.	Recognize the order of a sequence of instructions or occurrences as the beginning, middle and end. Create a logical sequence of instructions with guidance as needed.
1	With guidance, create programs by using creative expression or problem solving, to accomplish tasks that include sequencing and repetition. Programming languages, robot devices, or unplugged activity can serve as the means	Determine what changes will occur if there is a change in the sequence of instructions or occurrences. Identify patterns and repetition within sequences.
2	Create programs using a programming language, robot device, or unplugged activity that utilize sequencing and repetition to solve a problem or express creative ideas.	Recognize that a computer program is a set of instructions in a specific sequence. Create a simple computer program, including repeated sequences, to express an idea or solve a problem. Students can be supplied with the commands/code to create the program.
3	Create programs using a programming language that includes sequences , loops , conditionals , and variables to solve a problem or express an idea.	Integrate the use of a variable with a changing value into a computer program . Structure a computer program using conditionals (if...then...statements) and loops (repeated sequences).
4	Create programs using a programming language that includes sequences, loops, conditionals, and variables that utilize mathematics operations to manipulate values in order to solve a problem or express an idea.	Perform mathematical operations (addition, division, etc.) on variables in a program for a purpose such as tallying a score or keeping time (ex. If the ball crosses the line score=score+1).
5	Create programs using a programming language that includes sequences, loops, conditionals, event handlers, and variables that utilize mathematics operations to manipulate values in order to solve a problem or express an idea.	Incorporate one or more events that cause a set of instructions or occurrences to be executed in a computer program. Model (verbally, using a flowchart, etc.) when and how events in a computer program trigger a set of instructions (event handlers).

Skills for Standard: AP.C.01 Grades K-5

These annotations are a collaboration between [Maryland Center for Computing Education](#) and the [Maryland State Department of Education](#).