

¹ Category	Instruction	Syntactical Form	Example
INPUT/OUTPUT (I/O)	READ DISPLAY	READ <variable> DISPLAY <variable/constant>	READ height DISPLAY height
INITIALIZATION	SET	SET <variable> TO <variable/constant>	SET x TO 5 SET x TO z
COMPUTATION	COMPUTE	COMPUTE <variable> AS <expression>	COMPUTE area AS height*width
INCREMENT/DECREMENT	ADD SUBTRACT	ADD <variable/constant> TO <variable> SUBTRACT <variable/constant> FROM <variable>	ADD 1 TO x SUBTRACT 1 FROM x SUBTRACT x FROM y
BRANCHING	IF-THEN	IF <Boolean expression> THEN <statement if Boolean expression is true> ENDIF	IF temperature is above 90 THEN DISPLAY hot today ENDIF
	IF-THEN-ELSE	IF <Boolean expression> THEN <statement if Boolean expression is true> ELSE <statement if Boolean expression is false> ENDIF	IF temperature is above 90 THEN DISPLAY hot today ELSE DISPLAY not so hot day ENDIF
	NESTED IF-THEN-ELSE	IF <Boolean expression 1> THEN <statements if Boolean expression 1 is true> ELSE IF <Boolean expression 2> THEN <statements if Boolean expression 2 is true> ELSE <statements if Boolean expression 2 is false> ENDIF ENDIF	IF temperature is below 40 THEN DISPLAY cold day ELSE IF temperature is below 80 THEN DISPLAY mild day ELSE DISPLAY hot day ENDIF ENDIF
REPETITION	WHILE-ENDWHILE	WHILE <Boolean expression> <statements if Boolean expression is true> ENDWHILE	WHILE (n > 0) COMPUTE sum AS sum + n COMPUTE n AS n - 1 ENDWHILE
	DO-WHILE	DO <statements executed at least once> WHILE <expression>	DO COMPUTE n AS n - 1 WHILE (n > 0)
	REPEAT-UNTIL	REPEAT <statements> UNTIL <Boolean expression>	SET n AS 10 REPEAT COMPUTE n AS n + 1 UNTIL (n > 100)
	FOR-ENDFOR	FOR <iteration bounds> <statements> ENDFOR	FOR each day of the week DISPLAY day of the week ENDFOR
NESTED	NESTED-FOR	FOR <iteration bounds> FOR <iteration bounds> <statements> ENDFOR ENDFOR	FOR each day of the month FOR each day of the week DISPLAY day of the month + day of week ENDFOR ENDFOR
TERMINATE PROGRAM	HALT	HALT	HALT

Definitions

<variable>: An entity that may change its value (e.g. x)

<constant>: A value that does not change (e.g. 4)

<expression>: A mathematical expression involving variables, constants and operators (e.g. $4*x + y + 4*5$)

<boolean expression>: An expression that is TRUE or FALSE (e.g. $n > 3$)

<statement>: One or more expressions in a program (e.g. SET x TO y + y)

Counting Operations

Count as one operation:

- Each READ, SET, ADD, SUBTRACT, COMPUTE, DISPLAY statement.
- Each comparison in a Boolean expression, e.g. IF x is 0 OR x is 20 THEN counts as two operations. ELSE, ENDIF, ENDWHILE, ENDFOR, REPEAT, HALT do NOT count as operations.