

Task	Instructional Outcome	Activity	Type	Stem	Distractors	Feedback
1	The learner will indicate knowledge the correct definition of a loop.	The learner will select examples and non-examples of loop architecture	Apply Concept	A loop is:	<p>A piece of code that executes over and over.</p> <p>A piece of code that executes a certain number of times based on a condition.</p> <p>A piece of code that executes based on something being true.</p>	<p>This type of operation is a special case called an 'infinite loop'. A more general definition of a loop has another important factor.</p> <p>Correct.</p> <p>This type of operation is called a conditional. Loops have conditionals but have another important feature, also.</p>
2a	The learner will correctly identify situations in which a 'for' loop is appropriate.	The learner will select examples for which a 'for' loop is appropriate from a list of options.	Apply Concept	Which of these situations would be appropriate for a 'for' loop?	<p>A program that determines if a certain file exists on disk.</p> <p>A program that only exits when the user types 'quit'.</p> <p>A program that reads a list of words and returns their definition.</p>	<p>This program only has one conditional, not a set.</p> <p>This is an example of a conditional loop that executes while something is true. A 'for' loops operates on a set or list of values.</p> <p>Correct</p>
2b	The learner will correctly order lines of a 'for' loop.	The learner will drag lines of code into the correct sequence for a given prompt.	Remember Principle	Drag the following lines into the correct sequence.	<pre>for x in (0..5) puts "#{x} squared is:" puts x^2 end</pre>	<p>Correct. This loop is structured like a sentence: For x in zero through five, it puts x and puts x squared.</p>
3a	The learner will correctly identify situations in which a 'while' loop is appropriate.	The learner will select examples for which a 'while' loop is appropriate from a list of options.	Apply Concept	Which of these situations would be appropriate for a 'while' loop?	<p>A program that lists all of the files in a folder.</p> <p>A program that grants access only after the correct password is typed in.</p> <p>A program that calculates the volume of a cone, given base and height.</p>	<p>This program operates on a set list of items. It doesn't have to wait for a condition to be true.</p> <p>Correct</p> <p>This program does not need to loop.</p>
3b	The learner will correctly order lines of a 'while' loop.	The learner will drag lines of code into the correct sequence for a given prompt.	Remember Principle	Drag the following lines into the correct sequence.	<pre>while gets != "exit\n" puts "The program is still running!" end</pre>	<p>Correct. This loop is structured like a sentence: While 'gets' is not 'exit', it puts 'the program is still running!'</p>
4a	The learner will correctly identify situations in which an 'if' loop is appropriate.	The learner will select examples for which an 'if' loop is appropriate from a list of options.	Apply Concept	Which of these situations would be appropriate for an 'if' loop?	<p>A program that lists random numbers until a pre-chosen number is reached.</p> <p>A program that tells the user whether the number they entered is even or odd.</p> <p>A program that asks for three numbers, returns their square, and exits.</p>	<p>This program operates <i>while</i> a certain value is true (x != n). You could write this program with an <i>if</i> loop, but it would probably be more complicated.</p> <p>Correct</p> <p>This program operates on a set list of items. It doesn't have to evaluate the truth of a condition.</p>
4b	The learner will correctly order lines of an 'if' loop.	The learner will drag lines of code into the correct sequence for a given prompt.	Remember Principle	Drag the following lines into the correct sequence.	<pre>x = 3 if x == 3 puts "x is three!" end</pre>	<p>Correct. This loop is structured like a pair of sentences: X is three. If x is three, it says 'x is three!'</p>
5	Given a situation, the learner will correctly identify which kind of loop is appropriate.	The learner will be presented with a hypothetical situation, and will select from a list the appropriate type of loop to use.	Apply Principle	Identify which type of loop is appropriate for the given situations.	<p>A game that asks the user to guess a random number, and does not exit until the user guesses correctly.</p> <p>A program that counts up to 100, then exits.</p> <p>A piece of a program that alerts the user that something is true.</p> <p>A program that asks for three numbers, returns their square, and exits.</p> <p>A program that displays the first 10 numbers in the Fibonacci sequence.</p> <p>A program that tells the user whether a number they entered is even or odd.</p>	<p>While</p> <p>While</p> <p>If</p> <p>For</p> <p>For</p> <p>If</p>