# Using the 'for' loop in JavaScript

In this seventh video, Steve is moving from using the 'while' function in a loop to using the 'for' function. This is still a way of looping – getting a process to repeat according to certain conditions. But in this case the conditions are specified differently.

As before, this is quite complex code so watch the video all the way through once (or more) before using the step-by-step guide in this document (and on the website).

You will start with the same code you used in the previous activity, so open up that code in Notepad++ to start.
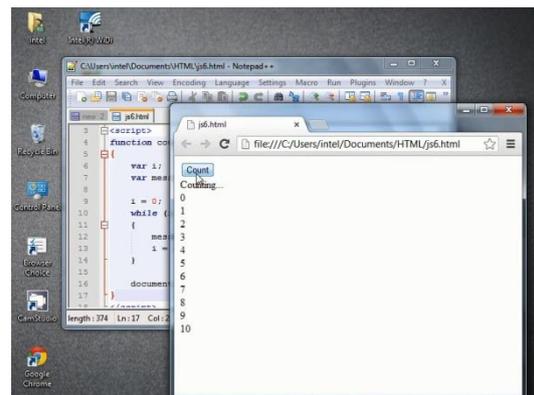
Step 1: Reminder how the 'while' loop worked (video start to 0.45)

Watch the video for 45 seconds to remind yourself how the while loop worked and how a count from 0 to 10 was started when the button was clicked.

Your code should look like the screenshot on the right before we start to make changes to it.


```
1  <html>
2  <head>
3  <script>
4      function count()
5      {
6          var i;
7          var message = "Counting...<br>;
8
9          i = 0;
10         while (i <= 10)
11         {
12             message = message + i + "<br>";
13             i = i + 1;
14         }
15
16         document.getElementById("countArea").innerHTML = message;
17     }
18  </script>
19  </head>
20  <body>
21  <input type="button" value="Count" onclick="count()"/>
22  <div id="countArea">
23  </div>
24  </body>
25  </html>
26
```

Brought to you by

TECH PARTNERSHIP

Step 2: Starting to change the syntax (video 0.46 – 01.57)

In this next step, Steve deletes some of the syntax associated with the 'while' function, as it doesn't work for the 'for' loop. He inserts some new syntax, which looks a little different from the previous example.

Delete the 'while' function from your Notepad++ document and add in the 'for' syntax including the bracket with specifications for i (i=0; i <=10; i++). The final part of this tells the browser that i will increase by one for each loop. Make sure your code looks like Steve's, and like the one above, before moving on.

```
1   <html>
2   <head>
3   <script>
4   function count()
5   {
6       var i;
7       var message = "Counting...<br>;
8
9       for (i = 0; i <= 10; i++ )
10      {
11          message = message + i + "<br>";
12          i = i + 1;
13      }
14
15          document.getElementById("countArea").innerHTML = message;
16  }
17  </script>
18  </head>
19  <body>
20  <input type="button" value="Count" onclick="count()"/>
21  <div id="countArea">
22  </div>
23  </body>
24  </html>
25
```

Step 3: Explaining how the 'for' syntax works (Video 01.58 – 03.15)

In this next step, Steve deletes another piece of code that isn't needed any more – the one that tells the browser to add 1 to i in each loop.

He then goes through what the function is doing. Change your code by carrying out the appropriate deletion, and make sure you listen to Steve's explanation of the new syntax, so you can understand how the 'for' loop works. Your code should look like the screenshot on the right.

```
1   <html>
2   <head>
3   <script>
4   function count()
5   {
6       var i;
7       var message = "Counting...<br>;
8
9       for (i = 0; i <= 10; i++ )
10      {
11          message = message + i + "<br>";
12      }
13
14          document.getElementById("countArea").innerHTML = message;
15  }
16  </script>
17  </head>
18  <body>
19  <input type="button" value="Count" onclick="count()"/>
20  <div id="countArea">
21  </div>
22  </body>
23  </html>
24
```

Step 4: Changing the function to count backwards (Video 03.15 – 04.48)

Steve saves and runs his code and finds exactly the same happens as it did when the while loop was used – the count from 0 to 10 happens after the button is clicked. So the 'for' loop is generating the same result as that produced by the 'while' loop.

Steve then makes a change to the function to make it count down from 10 to 0. He also explains this in detail. Watch the video carefully, and make the changes to your code so that it will count backwards. It should look like the screenshot on the right.

```
1   <html>
2   <head>
3   <script>
4   function count()
5   {
6       var i;
7       var message = "Counting...<br>";
8
9       for (i = 10; i >= 0; i-- )
10      {
11          message = message + i + "<br>";
12      }
13
14          document.getElementById("countArea").innerHTML = message;
15  }
16  </script>
17  </head>
18  <body>
19  <input type="button" value="Count" onclick="count()"/>
20  <div id="countArea">
21  </div>
22  </body>
23  </html>
24
```

Step 5: Publishing the code (Video 04.48 – end)

Steve publishes the code and finds that, on clicking, the button counts backwards from 10 to 0. Make sure your code works by publishing it. Take a screenshot of the code, and the published page and insert them into your Student Log. Well done – you have now mastered the use of both 'for' and 'while' loops.