

Coding Lesson 3 - Loops

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| **Mild - perfect for beginners** |

1. Ask the user to type in a number and print it 10 times using a for loop.
2. Change the for loop to only print out the number 5 times using a for loop.
3. Use a while loop to increment the number 5 times, then print the number.
4. Make a while loop that never ends that prints out your number.
5. Stop your program if it is still running forever.
6. Decrement your number inside of this while loop.
7. Change the while loop so that it ends when your number hits 0.

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| **Medium - expanding your skills** |

In math, exponents are just repeated multiplication. We can use loops to calculate this ourselves!

1. Ask the user to enter a number to be a base.
2. Ask the user to enter another number to be an exponent.
3. Using a loop, calculate the number that is: *base* to the power of *exponent*. (Note: only concern yourself with finding the correct answer for exponents greater than 0.)
4. Display the answer to the user.

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| **Spicy - looking for a challenge?** |

The digital root of a number is the single-digit value obtained by an iterative process of summing digits, on each iteration using the result from the previous iteration to compute a digit sum. Write a scratch project that finds the digital root of a user-defined *natural* number.