Coding Lesson 3 - Loops

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| **Mild - perfect for beginners** |

Using the starter file - <https://scratch.mit.edu/projects/343106569/>

Using a *repeat until* loop, ask the user to pick two numbers that add up to what the parrot is thinking until the user chooses two valid numbers.

1. Ask the user for the first number and save it as a variable.
2. Ask the user for the second number and save it as a variable.
3. Use operator blocks to add up the two variables and check if it equals the parrot’s sum, and stop the loop if the two numbers equal the sum.
4. Have the horse say “Good job!” after the loop ends.

Finished Example: <https://scratch.mit.edu/projects/343107180/>

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| **Medium - expanding your skills** |

Using the starter file - <https://scratch.mit.edu/projects/343109698>

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.

Finished Example: <https://scratch.mit.edu/projects/335524502/>

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

Using the starter file - <https://scratch.mit.edu/projects/342086508/>

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.

Finished Example: <https://scratch.mit.edu/projects/335525730/>