



AGES 12+
CERTIFICATE COURSE

TINKERAMA
PYTHON PROGRAMMING
12 WEEK PROGRAM

For this program, kids need a laptop with internet connection. They should sit in a quiet place in the house, with good connectivity, with their laptops connected to the charger. They also need a notebook and pen to take notes.

ACTIVITY	WHAT THEY MAKE	WHAT THEY LEARN
Week 1 - Introduction & Basic Scripts	Download Python and install it. Open IDLE and try a few things. Also install PyCharm. Create python scripts and run them. Also make variables, and print them on screen and do some math with variables	Discuss about computers, what they do, and how kids think they do them. Lead them to instruction execution through a fun activity. Familiarize with the computer environment to saving and retrieving files. Learn how to edit files, run them and see the output. Learn about variables
Week 3 - Conditional Programming & Strings	Complete a project using if-else, for loops and strings. Code a project in which they count the occurrences of letters in a message	Learn about conditional programming, how code will branch, and how to code it. Understand what strings are, and how they work. Learn about the ASCII table
Week 5 - Codes and Ciphers. Make the Encoder	Make coded messages manually and through code	Learn about the Caesar Cipher. Get started on coding it
Week 6 - Make the decoder in Python	Make the encoder and decoder for the Caesar Cipher in code	Learn about functions, conditional programming, and loops to complete this project