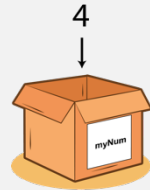# Computing Knowledge Organiser: Python Programming

Explore a range of programming techniques using the Python programming language

Giving values to variables

Use a single equals sign

```
lives = 3
playerName = "Chris"
```

Change the value of a variable

```
score = score + 5
lives = lives - 1
```

If – Else block

Used to choose a path through a program based on a condition of some kind

```
if temperature < 100:
    # do this code
else:
    # do this code instead
```

For loop

Repeats a block of code a set number of times

```
for dieThrow in range(0, 6):
    # repeat code 6 times
```

Display something on the screen

Uses the input command

```
print("Hello world!")
print(playerName)
print("Your score is", score)
```

Hello world!

Getting a value from a user

Uses the input command

```
playerName = input("Enter name: ")
```

Numbers need to be converted:

```
age = int(input("Enter age: "))
```

Using a comment

A comment is code that is meant for humans. The computer ignores it. Use a hashtag

```
# this is a comment
```

While loop

Repeats a block of code until a condition is met

```
while lives > 0:
    #repeat code in the loop
```

Key Terminology:

1. **Algorithm:** a set of instructions to complete a task
2. **Program:** computer code written to complete a task
3. **Sequence:** putting program code in the right order
4. **Selection:** choosing a path through a program, usually by using an IF - ELSE statement
5. **Repetition:** repeating a block of code in a program
6. **Iteration:** another word for repetition
7. **Variable:** a named value that is stored in computer memory and can be used in a program
8. **Boolean:** a variable that can either be True or False but nothing else
9. **Integer:** a whole number
10. **String:** a letter, word or phrase stored in a variable