Python Knowledge Organiser

Topic Summary:

Use of programming concepts to create basic programs

Iteration through loops and data structures

Use selection statements to check conditions and provide alternate paths to programs.

The use of libraries in programs.

Fancy reading more? Try these great links that explore this topic more widely! >>>>>>>>>>>>>>>>

Want to know more?

Scan the QR code to visit the curriculum overview for Year 8 Computing, including topic summaries, key words, and other ways to learn more about this particular topic.

SCAN ME

Output—Processed information that is sent out from a computer

```
print(“Hello World!”)
```

Hello World!

```
print(“Hello”, “World!”)
```

Hello World!

```
print(“Hello”+”World!”)
```

HelloWorld!

```
print(“Hello\nWorld!”)
```

Hello

World!

Input—Data sent to a computer to be processed

```
print(“Enter name”)
name=input()
print(“Hello”, name)
print(“Enter age”)
age=int(input())
```

Datatypes

Integer – Whole number	`age = 12`
Float (real) number – A number with a decimal point	`height = 1.52`
Character – A single letter, symbol or number	`a = ‘a’`
String – multiple characters	`name = “Bart”`
Boolean – Has two values: true of false.	`a = True` `b = False`

Relational Operators – Allows the Comparison of values

Less than	<	7<2
Greater than	>	7 > 2
Equal to	==	7==2
Not equal to	!=	7!=2
Less than or equal to	<=	7<=2
Greater than or equal to	>=	7>=2

Boolean Operators

AND	and	7 < 2 and 1 < 2
OR	or	7 < 2 or 1 < 2
NOT	not	not 7 < 2

Selection

Represents a decision in the code according to some condition. The condition is met then the block of code is executed otherwise it is not. Often alternative blocks of code are executed according to some condition.

Iteration

Sometimes we wish the code to repeat a set of instructions

`WHILE` loops are used when the we do not know beforehand the number of iterations needed and this varies according to some condition.

`FOR` loops are used when we know before hand the number of iterations we wish to make.

Lists

Create a list	`shapes=["square","circle"]`
Access element by index pos	`shapes[1] -> circle`
Append item to list	`shapes.append(“triangle”)`
Remove item from list	`shapes.remove(“circle”)`
Remove item from list by index	`shapes.pop(1)`
Insert item into list	`shapes.insert(2,”rectangle”)`
Number of elements in a list	`len(shapes)`
Loop through list	`for i in range(len(shapes)):` `print(shapes[i])`

Key Words:

Sequence

Selection

Iteration

Library

Random

Input

output

integer

string

variable

Topic Links:

This topic helps expand upon the knowledge learnt in Year 7’s Micro-bits topic where you have become experienced with text based programming and will allow you to use this as a base of programming knowledge for GCSE.