Python

Python comes with an editor called IDLE

ILDE contains a REPL (Read-Eval-Print-Loop) for you to experiment with.

You can create and save scripts by clicking on file>new window. You must save a script with a filename that ends .py

Expressions

Expressions are evaluated by python:
```
5
6 + 2
"Hello"
"Hello " * 3
```

PyGame

PyGame is a framework for Python that helps with common game tasks such as graphics, player input and sound.

Variables

Variables are like boxes to keep things in.

Use variables to store values:
```
name = "bob"
age = 21
width = 800
height = 600
```

You can use variables in expressions:
```
"Hello" + name
area = width * height
```

Websites

You can find downloads and reference documentation on these sites

Python:

www.python.org

PyGame:

www.pygame.org

Import

Import statements are used to load different modules
```
import pygame
import math
```

Lists

Lists are several items of data in a specific order.
```
names = ["bob", "alice", "dave"]
numbers = [4, 8, 3]
```
You can access lists with an index in square brackets:
```
names[0]
```
Values in lists can be changed:
```
names[2] = "emma"
```
You can also add, insert and delete items in lists.
```
names.append("james")
names.insert(2, "ruth")
del names[1]
```

Tuples

Tuples are several items of data grouped together.
```
size = (800, 400)
```
You can access parts of a tuples with a index in square brackets:
```
size[0]
```
Once created tuples are immutable (this means they cannot be changed).

Types

Python allows different types of data to be stored in variables. Different types behave in different ways. Some functions require specific types as their parameters.

Functions

Functions are reusable blocks of code.

Calling

You call functions by using brackets.
```
pygame.init()
```
Parameters

Some functions take parameters. Pass parameters by placing the values between the brackets.
```
pygame.image.load("spaceship.png")
```
Return values

Some functions return values. Use a variable to store the returned value.
```
spaceshup = pygame.image.load("spaceship.png")
```

Integers

Integers are numbers.
```
8
42
```
Convert to integers using int()

Strings

Strings are words.

You denote strings with quotes.
```
"hello"
"bob"
```
Convert to strings using str()

Floating point numbers

Floats are numbers with a decimal point:
```
3.14
241.24
```
Convert to floats using float()

If

If statements are used to execute a code only when certain conditions are true.
```
if [condition]:
    [true block]
else:
    [false block]
```

Loops

Use loops to repeat a block of code.

While

While loops continue loop wwhile the condition is true.
```
while [condition]:
    [loop body]
```

For

For loops perform the loop once for every item in a list.
```
for [variable] in [list]:
    [loop body]
```