**PYTHON**

**NUMBERS**

a = 10

b = 20

c = a + b

**STRINGS**

a = “hello”

b = “world”

c = a + b

**LISTS**

myList = [1,2,3]

myOtherList = [“a”,”B”]

a = myList[0]

b = len(myList)

**IF**

if a < 10 :

print “less than 10”

elif a == 10

print “equals 10”

else:

print “greater than 10”

**WHILE**

while a < 10:

a += 1

**FOR**

for x in range(5,10):

#do stuff 5 times (5 through 9)

aListOfMeat = [‘ham’,’chicken’,’beef’]

for x in aListOfMeat:

print x + “ is a meat”

**CONVERSION**

a = 10

b = 20

c = str(a) + str(b)

print c

“1020”

a = “10”

b = “20”

c = int(a) + int(b)

print c

30

**EXAMPLE 1 – Print numbers 1 to 10**

number = 1

while number <= 10:

print number

number += 1

for x in range(1,11):

print x

**EXAMPLE 2 – Print the sum of the numbers from 1 to 10**

total = 0

for x in range(1,11):

total = total + x

print total

**ROBOT Commands**

**Mover**

**robot.forward(seconds, power)**

**robot.backward(seconds,power)**

**robot.turnright(seconds, power),**

**robot.turnreft(seconds, power)**

**robot.moveforward(power)**

Same power to both motors - straight

**robot.movemotors(powerLeft,powerRight)**

Different power to each motor – curve

**robot.startturningleft(power),**

**robot.startturningright(power)**

**robot.stopmoving()**

Free wheel to a gradual stop

**robot.brake()**

Stop immediately by applying the brakes

**Light**

**robot.lightblue()**

**robot.lightred()**

**robot.lightgreen()**

**robot.lightall()**

**robot.lightoff()**

**colour = robot.whatcolour()**

**brightness = robot.howbright()**

**sleep(seconds)**

**QUIZ 1**

Make the robot move forwards for 2 seconds at 50% power then backwards for 2 seconds

Hint:Use **robot.forward, sleep, robot.backward**

**QUIZ 2**

Make the robot move forwards for 2 seconds at 50% power then turn around and come back again

Try different levels of power and time when turning to make it turn as close to 180 degrees as possible

Hint:Use **robot.turnright or robot.turnleft**

**QUIZ 3**

Make the robot’s light show red for 1 second, then blue for 1 second then green for 1 second

**QUIZ 4**

Make the robot’s light flash red, blue, green 10 times

**QUIZ 5**

Make the robot move forwards until it hits a black line then stop

**QUIZ 6**

Make the robot show you what colour it is seeing and work out which numbers mean which colours  
Hint:Use a loop with **robot.whatcolour() and sleep**

**QUIZ 7**

Make the robot show you what brightness it is seeing and work out which numbers mean black and which mean white   
Hint:Use a loop with **robot.howbright() and sleep**

**QUIZ 8**

Make the robot move forwards until it hits a black line then stop, turn around and come back again

**QUIZ 9**

Make the robot follow a black line