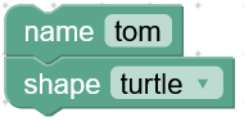
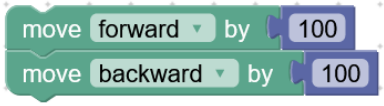
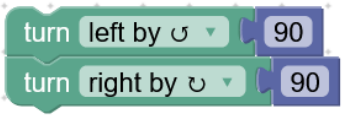
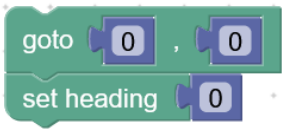
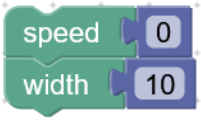
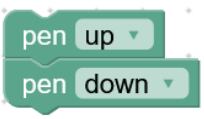
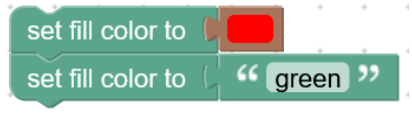
Cubie Python Blockly Reference Sheet

Created by Trainer Chin. Last updated: 5 April 2024

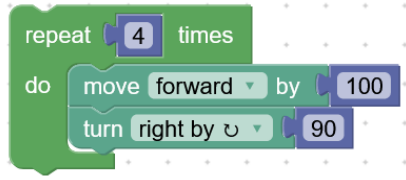
Module 1 - Learn Computer Programming Using Turtle

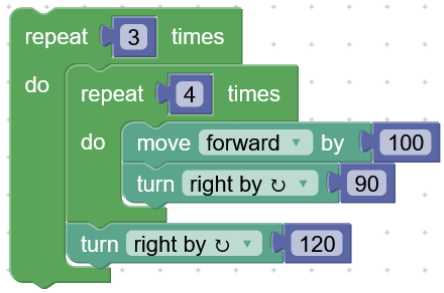
Block	Equivalent Python Code
	tom = Turtle() tom.shape('turtle')
	tom.color('#ff0000') tom.color('green') *#Note: take text block from Text category*
	tom.forward(100) tom.backward(100)
	tom.left(90) tom.right(90)
	tom.goto(0, 0) tom.setheading(0) *#Note: take number block from Math category*
	tom.circle(100)
	tom.speed(0) tom.width(10)
	tom.penup() tom.pendown()

	tom.begin_fill() tom.end_fill()
	tom.fillcolor('ff0000') tom.fillcolor('green')
	tom.right(180 - 45)
	tom.right(180 - (76 * 2))

Module 2 - Repeat and Repeat

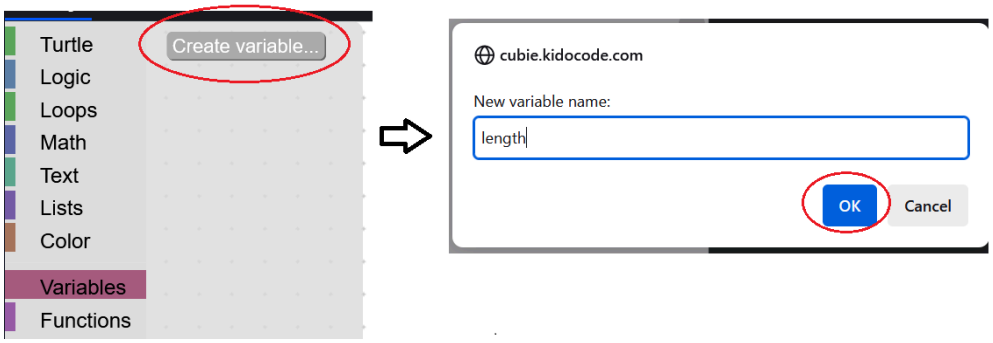
Block	**Equivalent Python Code**

	for count in range(4):
	  tom.forward(100)
	  tom.right(90)

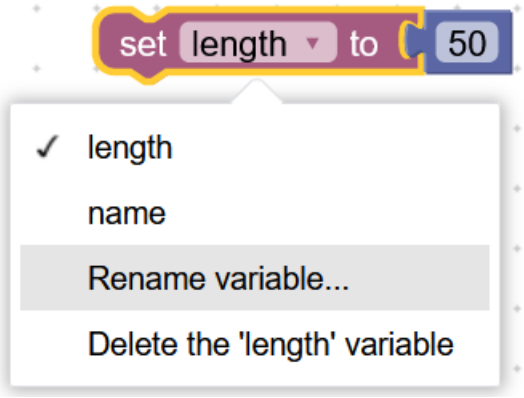
	for count in range(3):
	  for count in range(4):
	  tom.forward(100)
	  tom.right(90)
	  tom.right(120)

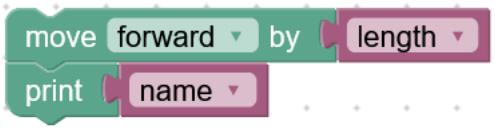
Module 3 - Variables

How to create a variable:



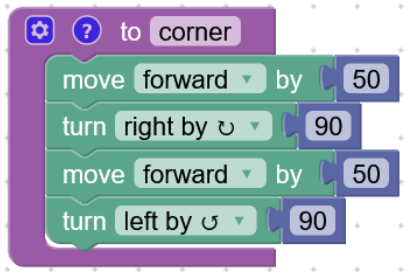
How to rename or delete variables:

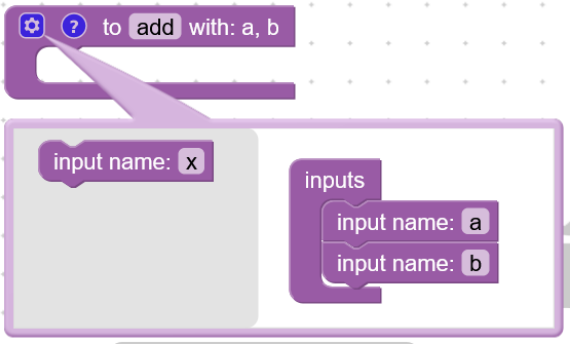
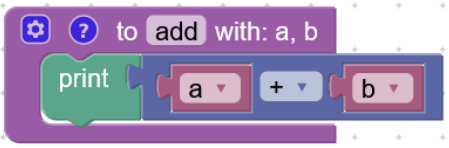
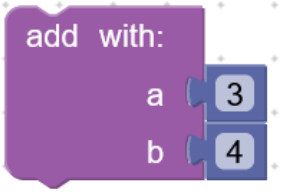
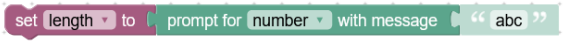


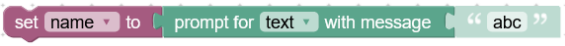
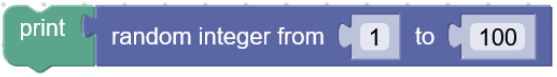
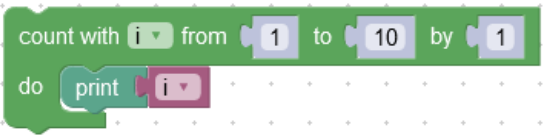
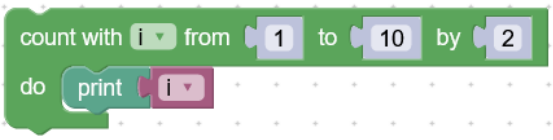
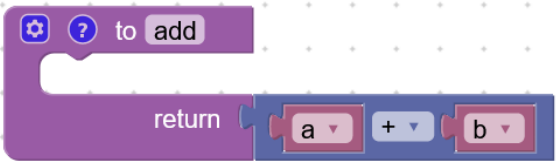
Block	Equivalent Python Code
	length = 50 name = 'John'
 *Note: Take print from Text category.*	tom.forward(length) print(name)

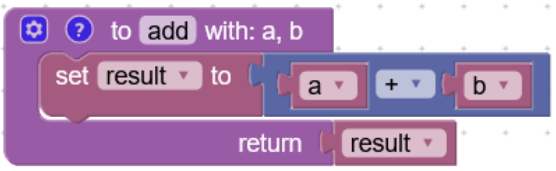
Module 4 - Functions

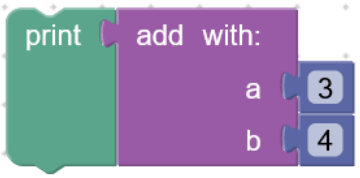
Block	Equivalent Python Code

	def corner():
	  tom.forward(50)
	  tom.right(90)
	  tom.forward(50)
	  tom.left(90)

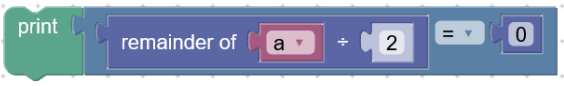
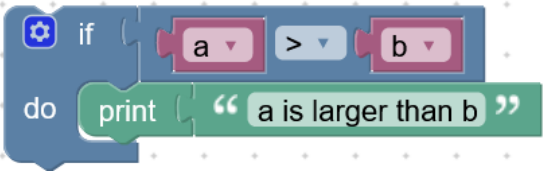
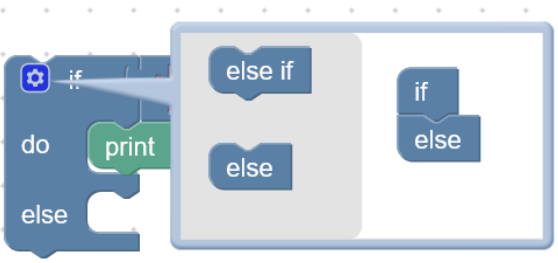
	corner()
	#This is how you add parameters to the function!!!
 *Note: Take arguments from Variables category.*	def add(a, b): print(a + b)
	add(3, 4)
	length = float(input('abc'))
	length = math.floor(float(input('abc')) *#Note: this has same effect as:* *#length = int(input('abc'))*

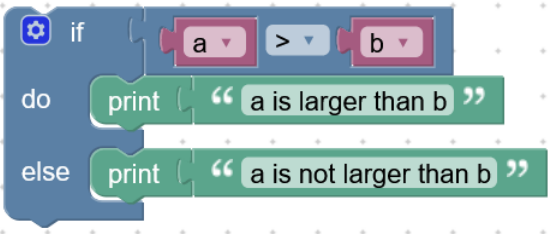
	name = input('abc')
	print(tom.position())
	print(random.randint(1, 100))
	for i in range(1, 11): print(i)
	for i in range(1, 11, 2): print(i)
	def add(a, b): return a + b *#Note: You can untick "allow statements" to hide the blank space.*

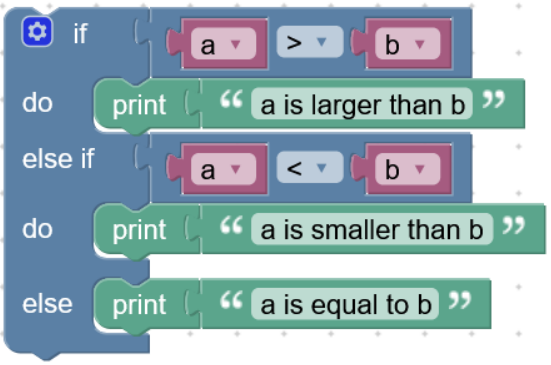
	def add(a, b):
	  result = a + b
	  return result

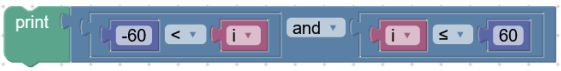
	print(add(3, 4))

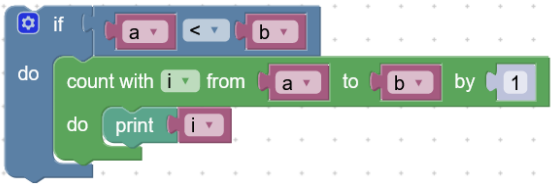
Module 5 - Logic and Conditions

Block	Equivalent Python Code
	print(3 > 2)
	print(a % 2 == 0)
	if a > b: print('a is larger than b')
	*#How to add else if and else blocks.*

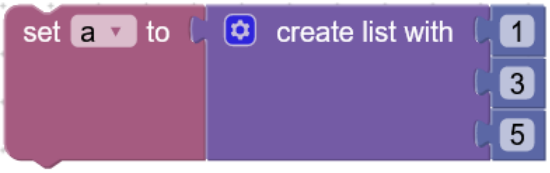
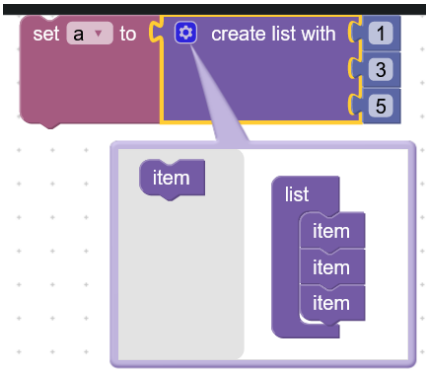
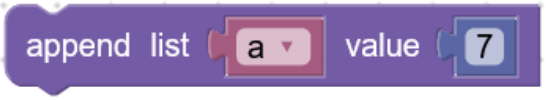
	if a > b:
	  print('a is larger than b')
	else:
	  print('a is not larger than b')

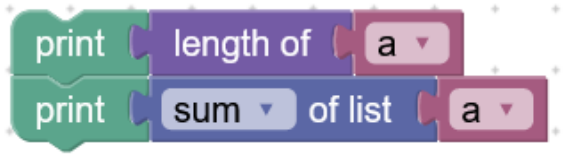
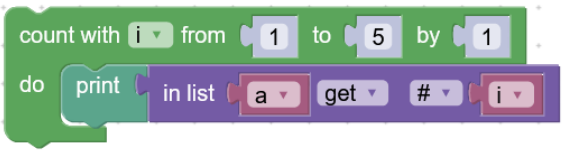
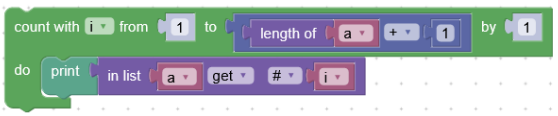
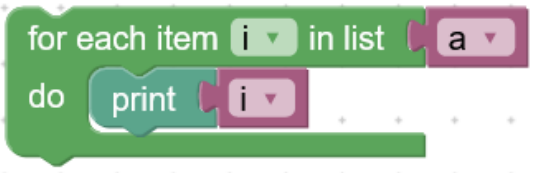
	if a > b:
	  print('a is larger than b')
	elif a < b:
	  print('a is smaller than b')
	else:
	  print('a is equal to b')

	print(-60 < i and i <= 60) *#Equivalent to:* *#print(-60 < i <= 60)*

	if a < b:
	  for i in range(a, b):
	  print(i)
	
	#Note: please use round down block to convert float to int else it won't work for range.

Module 6 - Lists

Block	**Equivalent Python Code**
	a = []
	a = [1, 3, 5]
	*#How to add additional items to list.*
	a.append(7)

	print(len(a)) print(sum(a)) *#Note: sum block is from Math category.*
	print(a[0]) print(a[1]) print(a[2]) print(a[-1]) ***#Note: Blockly lists index starts from 1 instead of 0.*** *Item #0 will give index -1 which is the last item in the list.*
	for i in range(1, 5): print(a[i - 1])
	for i in range(1, len(a) + 1): print(a[i - 1])
	for i in a: print(i)

Module 7 - Python IDLE

Blockly-using students do NOT need to do Module 7 (Python IDLE).