Name: Date:

Recap:

1. Writing For Loops
2. Using Range in code
3. List and List Index

Learning Outcomes:

1. Pattern sequence with practice
   - for loops, range, list and list indexing

2. Functions and for loops

Explanation Points:

- Application of for loops, list and indexing to solve questions.
- Get the students to explain the process/data flow

Breakdown of Lesson Plan:

Recap Lesson 1 Quiz	15 minutes
Lesson 2.1 (Guided application Questions)	15 min
Lesson 2.2 (Open Ended Questions) Get the students to explain the thought process of their codes	30 min
Lesson 2 Quiz	30 min

Note: There is a high chance of student not being able to complete on time.

Name: Date:

Recap Lesson 1 Quiz

Question 1:

Using For Loops and the range function (start, stop, step), create a sequence of numbers starting from 1, ending at 5 with increment of 1

Output

1	
2	
3	

1	1
2	2
3	3
4	4
5	5

Question 2:

Using For Loops and the range function (), create a sequence of numbers starting from 5, ending at 9 with increment of 1

Output

1	
2	
3	
4	

1	5
2	6
3	7
4	8
5	9

Question 3
James has a list of items named shoppinglist where shoppinglist=["pens", "pencils", "crayons", "paper", "clips", "paint"]
Find the total number of different types of items he needs to buy and print in the format below

Output

1	
2	

1	He needs to buy 6 different items

Name: Date:

Recap Lesson 1 Quiz

Question 4:

James has a name list of students in position where namelist= ['Jane', 'Kate', 'Claire', 'Jasmine', 'Jennifer', 'Jenn'].
Find the student in 2nd position and print in the format below

                                        Output

1	
2	

1	Kate is in 2nd position

Question 5:

James recorded his Chinese scores from his monthly test in year 2019 in order in a list named scorelist where scorelist = [99,50, 78,92,26,100,70,30,100,20,100,90]
Find the score for Septebmer and print in the format below.

                                        Output

1	
2	

1	He scored 100 in September

Question 6:

Using list slicing, find the output for the following.

                                        Output

1	mylist=[55,87,91,67,83,23]
2	print(weight[-5:-1])

1	

Recap Lesson 1 Quiz

Question 7:

Jane saved $2 in a very special bank account on the first day of January 2019. The bank account doubles his money monthly at the end of each month. Find the amount in the bank at the end of each month and fill in column A

1	
2	
3	
4	

Month	Column A: Amount
End of Jan 2019	
End of Feb 2019	
End of Mar 2019	
End of April 2019	
End of May 2019	
End of June 2019	
End of Jul 2019	
End of Aug 2019	
End of Sep 2019	
End of Oct 2019	
End of Nov 2019	
End of Dec 2019	

Question 8:

Farmer Jack owns a farm that produces 5 tonnes of turnips a year. Farmer Jack sells to his usual market A at $1000 per tonne. He wants to know how much money he would earn from market A at the end of 10 years. *(Use for loops and range function)*

Output

1	
2	
3	
4	

1	He will have $50000 at the end of 10 years

Question 9:

Josh has 10 stickers a day. He gives to his brother a total of 5 stickers each day. He saves the remaining stickers each day. Find the total number of stickers he collects at the end of 10 days. Print in the format: "He has 50 stickers at the end of 10 days" *(Use for loops and range function)*

Name: Date:

Recap Lesson 1 Quiz

Question 10:

Create the multiplication table for 7 times table in the format:

Method 1

1	
2	
3	

1 x 7 = 7

2 x 7 = 14

3 x 7 = 21

Method 2

1	
2	
3	
4	

.

.

.

.

.

12 x 7 = 84

Name: Date:

Lesson 2.1

Recap in Lesson 1:

a. Python For Loop syntax:

For iterating variable in a sequence:
        statement block
        print(statement)

b. List Indexing :   **1. Index starts from 0 in Python.**
                    2. First element has an index 0, second element has index 1, so on.
                     3. Negative Index starts from -1
                    4. To access an element by its index we need to use square brackets

c. Slice Notation Syntax:
1. **The full slice syntax is -** *start : stop : step*.
2. **Start refers to the index of the element which is used as a start of our slice.**
3. **Stop refers to the index of the element we should stop just before to finish our slice.**
4. **Step allows you to take each nth-element within a** *start : stop* range.

d. Python convert range to list syntax:
a= list(range())

e. Python range() function syntax:
range(start: stop: step)

f. Python len syntax:
list=[]
print(len(list))

Lesson 2.1

Task 1a: Using range and indexing, complete the following task.

You are given a list of numbers with list name called list1 where list1= [10,20,10,40,50,60,70]

You need to find the value of the 4th and 7th term.ie. (40 + 70)

Complete line 2

Output

1	list1=[10,20,10,40,50,60,70]
2	value = list1[ ] + list1[ ]
3	print(value)

1	

Task 2: Using for loops, range, indexing, complete the following task

You are given a list of numbers with list name called list2 where list2= [10,20,30,40,50,60,70,80]

You need to print out the values of the sum of the current even element and next even element in list2

1st term = 20 +40

2nd term = 40+60

3rd term = 60+80

Solution 1:

Output

1	list2= [10,20,30,40,50,60,70,80]
2	for i in range (1,8,2):
3	value=list2[i] + list2[i+2]
4	print (value)

1	
2	
3	
4	

Solution 2: Note line 3. We are using indexing to call the numbers in list2. We are using square brackets and " : "

Output

1	list2= [10,20,30,40,50,60,70,80]
2	previousterm=20
3	for i in list2[3:8:2]:
4	print(previousterm + i)
5	previousterm = i

1	
2	
3	

Name: Date:

Lesson 2.1

Task 3: Using for loops, range, indexing, complete the following task.

You are given a list of numbers with list name called list3 where list3=[1,2,1,4,5,6]

You need to print out the values of the sum of the current element and the previous element in list3.

1st term = 1+2

2nd term = 2+1

3rd term = 1+4

4th term = 4+5

5th term = 5+6

Complete line 2 and 3

Output

1	list3=[1,2,1,4,5,6]
2	for i in range ( ):
3	value=list3[ ] + list3[ ]
4	print (value)

1	3
2	3
3	5
4	9
5	11

Task 4: Using for loops, range, indexing, complete the following task.

You are given a list of numbers with list name called list4 where list4= [4,7,8,10,1,4,3,11,12,15]

You need to print out the values of the multiplication of the current odd element and next odd element in list4.

1st term = 4 x 8

2nd term = 8 x 1

3rd term = 1x 3

4th term = 3 x 12

Output

1	
2	
3	
4	

1	32
2	8
3	3
4	36

Python

Python Module 2 Lesson 2

Name: Date:

Lesson 2.1

Task 5: Using for loops, range and step counter, complete the following task.

You are given the initial sequence of numbers - 2,4,6,8,10........20.

The answer is determined by taking the nth term of the sequence and multiply it by n . Print the first 10 answers

        (numbers) x (terms)

1st answer =   2   x   1

2nd answer =   4   x   2

3rd answer =   6   x   3

4th answer=   8   x   4

5th answer =   10   x   5

.

.

10th answer =   20   x   10

Solution 1:

                                         Output

1	terms =1
2	for numbers in range (2,21,2):
3	answer=numbers*terms
4	terms = terms + 1
5	print(answer)

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Solution 2: Complete line 2 and line 4

1	numbers =2
2	for terms in range ( ):
3	answer=numbers*terms
4	
5	print(answer)

Name: Date:

Lesson 2.1

Task 6: Using for loops, range and step counter, complete the following task.

You are given a list of numbers in a list named list6 where list6=[20,40,60,80,100,120,140,160,180,200].

The answer is determined by taking the nth term of the list and multiply it by n . Print the 9th answer.

　　　　　　　(numbers) x (terms)

1st answer =   20   x   1

2nd answer =   40   x   2

3rd answer =   60   x   3

4th answer=   80   x   4

5th answer =   100   x   5

.

.

10th answer =   200   x   10

Complete lines 3, 4, 5, 6

Output

1	list6= [20,40,60,80,100,120,140,160,180,200]
2	terms=1
3	for numbers in list[ ]:
4	
5	
6	

1	1620

Name: Date:

Lesson 2.1

Task 7:

Using for loops, complete the following task.

You are given the number pattern 1,2,4,7,11,16, ………….

The answer of the number pattern above is determined by adding 1,2,3,4,5,6,………… to the respective terms in the above number pattern.

   a. Find the first 10 terms of the number pattern. The output is as follows:

    1

1 +1

2 + 2

4 + 3

7 + 4

11 + 5

16 + 6

(sum) + (terms)			= answer (answer of the number pattern)	
1	"range"		= 1	1st term
1	+	1	= 2	2nd term
2	+	2	= 4	3rd term
4	+	3	= 7	4th term
7	+	4	= 11	5th term
11	+	5	= 16	6th term
16	+	6	=22	7th term
			.	
			.	
				10th term

Name: Date:

Lesson 2.1

Task 7a:

Go through the answer below: (Line 3 - To find the range, note that you need 10 terms)

Output

1	prev=1
2	for i in range(1,11):
3	answer = prev + i
4	print(answer)
5	prev = answer

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Task 7ai: (Line 5 and 6 – What happens when line 3 and 4 are interchanged?)

Output

1	prev=1
2	for i in range(1,11):
3	prev = answer
4	answer =prev + i
5	print(answer)

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Task 7ai: Read the code sequence. If we were to keep the code sequence of 7ai, What must the range( ) be to get the correct number pattern?

Name: Date:

Lesson 2.1

Task 7b:

In the above question, find the answer of the 12th term. *Note on the indentation of print*

Output

2	
3	
4	
5	
6	

1	

Task 8:

Using for loops, complete the following task.

You are given the number pattern 1,2,3,4,5,6, ………….

Using for loops, print the sum of the sequence. The output will be as follows:

1

1+2

1+2+3

1+2+3+4

1+2+3+4+5

.

.

.

1+2+3+4+5……+9+10 = (55)

Name: Date:

Lesson 2.1

Task 8:

Come up with the pattern and translate it to the code. (Find it similar to Task 7?)

(sum) + (terms) = answer

"range"

0	+	1	= 1	1st answer
1	+	2	= 3	2nd answer
3	+	3	= 6	3rd answer
6	+	4	= 10	4th answer
10	+	5	= 15	5th answer

Complete lines 1,2,3. To find the range, note that you need 10 terms.

Output

1	prev=
2	for i in range( ):
3	next =prev + i
4	print (prev)
5	prev = next

1	1
2	3
3	6
4	10
5	15
6	21
7	28
8	36
9	45
10	55

Name: Date:

Lesson 2.1

Task 9: Print the first 15 terms of the fibonacci sequence.

The next fibonacci sequence is given by the sum of the 2 preceeding terms. the first 2 terms are given as 1,1...

1st term = 1

2nd term =1

3rd term = 1+1 =2

4th term= 1+2 = 3

5th term = 2+3 = 5

6th term = 3+5 = 8

.

.

.

15th term =

Name: Date:

Lesson 2.2

In lesson 1, we had learnt to sum of the numbers in the list or in the range?

Find the result of the sum of the numbers in the list named num where num= [10,20,30,40]

Output

1	num=[10,20,30,40]
2	sum=0
3	for numbers in num:
4	sum=sum+numbers
5	print(sum)

1	100

Find the result of the sum of the numbers in the range(6). Ie.1+2+3+4+5

Output

2	sum=0
3	for numbers in range(6):
4	sum=sum+numbers
5	print(sum)

1	15

What if I would like to find the sum of numbers in the range(10) and I would like to change the number. As we have learnt, functions would be an efficient way to do that.

In this lesson, we will see how we can combine functions with for loops.

Below, we observe how a simple For Loop can be placed inside a function.

Output

1	def funct(n):
2	sum = 0
3	for num in range(n):
4	sum =sum+num
5	print(sum)
6	
7	funct(6)
8	funct(5)

1	15
2	10

Name: Date:

Lesson 2.2

Type the following and fill in the output after pressing F5
The numbers represent the lines.

Task 1:

Output

1	def funct():
2	Total = 0
3	for num in range(4):
4	Total += 1
5	print(Total)
6	
7	funct()

1	
2	
3	
4	

Task 2:

Output

1	def funct():
2	Total = 0
3	for num in range(10):
4	Total += 1
5	print(Total)
6	
7	funct()

1	

Task 1, 2: Take note of line 5 indentation. Explain the difference and write your Key take-aways.

Name: Date:

Lesson 2.2

Task 3:

Output

1	def funct():
2	Total = 0
3	for num in range(3):
4	Total += 1
5	print(Total)
6	
7	funct()

1	

What are the values of num? What are the values of Total?

Value of num	Value of Total

Task 4:

Output

1	def funct():
2	Total = 0
3	for num in range(3):
4	Total += num
5	print(Total)
6	
7	funct()

1	

Value of num	Value of Total

Task 3, 4: Take note of line 4 and Explain the difference and write your Key take-aways.

Name: Date:

Lesson 2.2

Task 5: In Task 3 and 4, we have a changing for loop in the function.

Output

1	def funct(x):
2	Total = 0
3	for num in range(x):
4	Total += 1
5	print(Total)
6	
7	funct(4)

1	

What are the values of num? What are the values of Total?

Value of num	Value of Total

Task 6:

Output

1	def funct(y):
2	Total = 0
3	for num in range(y):
4	Total += num
5	print(Total)
6	
7	funct(4)

1	

Value of num	Value of Total

Task 5, 6: Take note of line 4 and Explain the difference and write your Key take-aways.

Name: Date:

Lesson 2.2

Task 7:

Output

1	def funct():
2	Total = 0
3	for num in range(4):
4	Total += 1
5	print(Total)
6	
7	funct()

1	
2	
3	
4	

Task 8:

Output

1	def funct():
2	Total = 0
3	for num in range(4):
4	print(Total)
5	Total += 1
6	
7	funct()

1	
2	
3	
4	

Task 7, 8: Take note of lines 4 and 5 and Explain the difference and explain the python sequence

Name: Date:

Lesson 2.2

Task 9: In this task, we reinforce the indentation of print. How does the indentation of print affect the answer? Explain to your teacher.

Output

1	def funct():
2	Total = 0
3	for num in range(4):
4	Total += 1
5	print(Total)
6	print(Total)
7	
8	funct()

1	
2	
3	
4	
5	

Task 10: In this task, create a function to find the result of the multiplication of numbers in 2 different groups of range. Print in the format "The answer is ___"

Group 1: range(5)
Group 2: range(3)

Output

1	def funct(x):
2	result = 0
3	for num in range(x):
4	result = result * num
5	print(result)
6	
7	funct(5)
8	funct(3)

1	
2	

Name: Date:

Lesson 2.2

Task 11: In this task, we are creating a function that defines the start of the range

Output

1	def funct(x):
2	Total = 0
3	for num in range(x,6):
4	Total += 1
5	print(Total)
6	
7	funct(2)

1	
2	
3	
4	

Value of num	Value of Total
2	
3	
4	
5	

Task 12: In this task, we are creating a function that defines the start of the range

Output

1	def funct(x):
2	Total = 0
3	for num in range(x,6):
4	Total += num
5	print(Total)
6	
7	funct(2)

1	
2	
3	
4	

Value of num	Value of Total
2	
3	
4	
5	

Task 11, 12: Take note of lines 4 and Explain the difference and explain the python sequence

Name: Date:

Lesson 2.2

Task 13: Define a function to calculate the volume of a regular cube with sides of x cm.

Use the function and for loops to find and print the volume of the cube of sizes for x = 4,6,8...20

Volume of cube = x * x * x

Output

1	def cubevolume(x):
2	volume = x * x* x
3	return volume
4	
5	for sizes in range (4,21,2):
6	print(cubevolume(sizes))

1	
2	
3	
4	
5	
6	
7	
8	

Task 14: Define a function to calculate the area of a regular square with sides of y cm.

a. Use the function and for loops to find and print the area of the squares of sides for y = 4,6,8,10

Area of square = y * y

Print in the format below.

Output

1	
2	
3	
4	
5	
6	

1	The area of square of side 4 is 16
2	The area of square of side 6 is 36
3	The area of square of side 8 is 64
4	The area of square of side 10 is 100

b. Find the total area of the 4 squares and print in the format below.

Output

1	
2	
3	
4	

1	The total area is 216

Name: Date:

Lesson 2.2

Task 15:

John runs a shop with 4 items for sale. His computer system has given him 3 lists for the month:
numberofitemssold = [1,2,3,4]
priceofitemssold = [1,4,7,6]
costofitemssold = [1,2,4,3]

The index of each list corresponds to item 1 to 4

Define a function that takes in 3 arguments and returns the total amount of profit that John has made. Use the function to print the amount of profit that John has made.
Complete line 7

Output

1	numberofitemssold = [1,2,3,4]
2	priceofitemssold = [1,4,7,6]
3	costofitemssold = [1,2,4,3]
4	
5	def sales (qty, price, cost):
6	totalprofit =0
7	for i in range( ):
8	profit=(qty[i] * (price[i] – cost[i])
9	totalprofit = totalprofit + profit
10	return totalprofit
11	
12	print(sales(numberofitemssold, priceofitemssold, costofitemssold)

1	25

Name: Date:

Lesson 2.2

Task 16:
Peter sells to his classmates 4 different types of card games. His notebook has given him 3 lists for the month:
numberofcardsssold = [5,10,30,40]
priceofcardssold = [10,4,70,6]
costofcardssold = [9,2,67,4]
The index of each list corresponds to item 1 to 4

a. Define a function that takes in 3 arguments and prints the total amount of profit that Peter has made for each of the different card games in the format below:

Output

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

1	He made a profit of 5 for 5 items sold
2	He made a profit of 380 for 10 items sold
3	He made a profit of 90 for 30 items sold
4	He made a profit of 80 for 40 items sold

b. Define a function that takes in 3 arguments and prints the total amount of profit that Peter has made for all the 85 cards sold in the format below:
Complete line 8 and 13

Output

1	numberofcardsssold = [5,10,30,40]
2	priceofcardssold = [10,4,70,6]
3	costofcardssold = [9,2,67,4]
4	
5	def sales (qty, price, cost):
6	totalprofit =0
7	totalitems = 0
8	for i in range( ):
9	profit=(qty[i] * (price[i] – cost[i])
10	item=qty[i]
11	totalprofit = totalprofit + profit
12	totalitems=totalitems + item
13	print(

1	He made a total profit of 555 for 85 items sold

Lesson 2.3

Task 1:

Alfred studies the cell division process of an amoeba (*a type of cell or unicellular organism which has the ability to alter its shape*). For every 5 minutes, 1 amoeba will split into 2.

i) Given a starting number of amoebas (n), Alfred wants to know how many amoebas will be present after each cycle, for a total of <u>10 cycles</u> (50 minutes). Find out the number of amoebas present given that there were 1 amoeba, 5 amoebas and 15 amoebas at first.

1	def amoeba(n):
2	for c in range(1,10):
3	t = c * 5
4	n *= 2
5	print(c, t, n)
6	amoeba(1)
7	amoeba(5)
8	amoeba(15)

ii) Fill in the table below with your results:

Cycle(c)	Time (t)	For different starting number(n) of amoebas		
		For 1 amoeba (n = 1)	For 5 amoebas (n = 5)	For 15 amoebas (n = 15)
1	5			
2	10			
3	15			
4	20			
5	25			
6	30			
7	35			
8	40			
9	45			
10	50			

Food for thought: What is the use of line 4?

Name: Date:

Lesson 2.3
Task 2:

ABC Bank has a special account that provides a 0.5% interest rate (multiply by 1.005) per year.

i) Given a starting amount (amt), edit the function below to reflect how much money the person will have after each year, for a total of <u>5 years</u>. Find the amount of money if $10000, $50000 and $125000 was deposited.

1	def bank(amt):
2	for num in range(___):
3	print(amt)
4	amt
5	
6	bank(10000)
7	bank(50000)
8	bank(125000)

ii) Fill in the table below with your results:

Value of num:	Value of amt:		
	For 10000	For 50000	For 125000
1			
2			
3			
4			
5			

Name: Date:

Lesson 2.3

Task 3:
Farmer Jack owns a farm that produces 500 tonnes of turnips a year. Farmer Jack knows 3 markets that he can sell to. He wants to know how much money he would earn from each market after each year, for a total of <u>10 years.</u>

Edit the function below to find the amount of money Farmer Jack earns if he sells to Market A for $1000 per tonne, Market B for $950 per tonne and Market C for $1050 per tonne.

1	def farmer(n):
2	Total = 0
3	for num in range(___):
4	print(_____)
5	Total+=500*___
6	
7	farmer(1000)
7	farmer(950)
8	farmer(1050)

Fill in the table below with your results:

Value of num:	Value of Total:		
	For Market A	For Market B	For Market C
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Lesson 2.3

Task 4:

Johan tracks the amount of water used by his family. He notices that, on average, his family uses 1000 litres of water per day. Johan knows they can choose either Company A, B or C to pay the water bills (their cost per litre is shown below). Johan must choose which company to use.

i) Write a function to help him calculate how much he needs to spend for 10 days in March for each company.

Company	Company A	Company B	Company C
Cost per Litre	$0.01	$0.015	$0.02

ii) Write a function to find the expected water bill for each of the 3 companies. Fill in the table below with your answer.

Number of Day:	Expected Water Expenditure Per Day		
	For Company A	For Company B	For Company C
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Name: Date:

End of Lesson 2 Quiz

Question 1:

Kevin wants to estimate how much money he spends in the month of March. He knows he spends $5 a day.

i)Write a function to help him calculate the amount of money he spends after a specific number of days up to Day 12.

Print your answer in the following format:

"After _1_ days, Kevin would have spent $___."

"After _2_ days, Kevin would have spent $___."

.

.

.

"After _12_ days, Kevin would have spent $___."

ii) Display how much he spent in total, in the following format:

"In total, on the 31st day of March, Kevin spends $___."

(HINT: What happens if we write a print() inside the For Loop?)

End of Lesson 2 Quiz

Question 2:

Jamie is studying the internal forces (*force exerted by one part of an object on another part of the same object*) acting on a wooden beam.

She assumes that the internal forces increase linearly by 1 Newton per cm. (*Newton is a unit of measure for forces*).

She knows that at point A, the internal force begins at 0 Newtons. (At 1cm, the force will be 1 Newton. At 2cm, the force will be 2 Newtons…)

30 cm
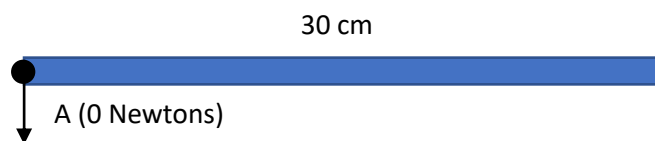
A (0 Newtons)

a. She wants to find the internal forces acting on the beam for each 1 cm segments. Your output will be as below:

"At __1__ cm away from point A, the internal force has a magnitude of __1__ Newtons."

"At __2__ cm away from point A, the internal force has a magnitude of __2__ Newtons."

"At __3__ cm away from point A, the internal force has a magnitude of __3__ Newtons."

.

.

.

"At __30__ cm away from point A, the internal force has a magnitude of __30__

Newtons."

Name: Date:

End of Lesson 2 Quiz

Question 3:

Amos is saving money to buy a new gaming console that costs $1500. He saves a total of $5 a day for a period of 30 days. He wants to track the total amount of money he saves each day.

i) Write a function that can print the total amount of money he saves after 30 days.

"After __30__days, Amos would have saved $____ in total."

ii) Amos wants to know how much more money he would need to save after the 30 days.

At the end of your function, calculate how much more money he would need to save. Print your answer in the format:

"Amos would need $___ more to buy his gaming console."

iii) Calculate how many more days Amos would need to save for and print in the following format:

"Amos would need to save for ___ more days in order to buy his gaming console."

End of Lesson 2 Quiz

Question 4

David has a enrichment centre. His computer system has given him 2 lists for the month:

The numberofstudents list shows him the students he has. The fixedcost list corresponds to the number of students.

numberofstudents= [100,200,50,60,70,60,40,60,90]

fixedcost = [50,200,40,50,60,50,30,40,80]

The fees for each student is $1 per month

Define a function that takes in 2 arguments and returns the total amount of profit that David has made *(profit = numberofstudents * 1 – fixedcost)*

Use the function to print the amount of profit that John has made in the format "He makes a total profit of _____ "

Question 5

Jane needs to find out the perimeter of squares with different lengths as below:

Square 1: Length of 5
Square 2: Length of 10
Square 3: Length of 15
Square 4: Length of 20
Square 5: Length of 25
.
.
.
.
Square 8: Length of 40

Using functions and for loops, find and print the perimeter of the square of different lengths in the format below:
Formula: Perimeter of square = length x 4

The perimeter of square with length of 5 is 20
The perimeter of square with length of 10 is 40
.
.
.
.
The perimeter of square with length of 40 is 160