

## **Unit Plan: Introduction of Python**

**Topic of the Lesson:** Function

**Grade and Content:** 10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> grade, CSP

### **Learning Objectives**

1. Students will be able to identify and call pre-made function in Python.
2. Students will be able to create code segment with functions to solve certain problems.

### **NYS standards:**

9-12.CT.1: Create a simple digital model that makes predictions of outcomes.

9-12.CT.4, 9-12.CT.5, 9-12.CT.6, 9-12.CT.7, 9-12.CT.8, 9-12.CT.9, 9-12.CT.10  
Algorithms and Programming

**Content-specific vocabulary:** function, function call,

### **Materials/Resources:**

<https://books.trinket.io/pfe/04-functions.html>

### **Assessments:**

Practice problems and programming code

### **Warm-up/ Mini lesson:**

(#1-2) Teacher will model the code and explain the name of the function and the outcome of the program.

Turn and Talk (#3-5): Identify the name of the function. State the type of the input shown and predict the outcome

```
>>> max('Hello world')
```

```
>>> min('Hello world')
```

### **Activity / Sequence of Lesson:**

(#6-7) Group work: Predict the outcomes of the following. Then run them to confirm the answers.

```
int('32')      int('Hello')      int(3.99999)   int(-2.3)
float(32)      float('3.14159')    str(32)        str(3.14159)
```

(#8) Teacher will introduce how “random” works in computer programs.

(#9-11) Exercise #1: Students will run the code and understand how “random” works.

(#12-14) Live coding and modeling

Teacher will show the process of creating a function and call the function to achieve certain goal.

(#15) Exercise 4 and class share. (b is correct)

(#16) Exercise 5 and class share. (d is correct)

(#17) Programming Exercise 7.

Code sample:

```
def computegrade():
    line=input('Enter score: ')

    try:
        line=int(line)
        if line <0 or line >100:
            print ('Bad score')
        elif line > 90:
            print('A')
        elif line > 80 and line <= 90:
            print('B')
        elif line >70 and line <=80:
            print('C')
```

```
elif line >60 and line <= 70:  
    print('D')  
else: print ('F')  
except: print ('Bad score')
```

```
computegrade()
```

**Summary / Next Steps / Exit Slip:**

Group presentation for the programs. Feedback and comment from the class and the teacher.