LESSON_5 MATH OPERATIONS

OBJECTIVES

Students will be able to:

- Perform basic arithmetic operations in Python (addition, multiplication, and division)
- Convert between data types
- Display information and Concatenate values in the print statement

STANDARDS

7-8.CT.7, 7-8.CT.8

UNPLUGGED _SCAFOLLDED QUESTIONS + BIG REVEAL (WORK IN PAIRS)

- **Read the program below and predict what does it do?**
- **Answer the questions built in the code**

```
1  # Read the following program
2
3  # What does this program do?
4
5  length =int(input("What is the length of the rectangle?"))
6  # Why does the code in line 5 have int before the input()? int(input()
7
8  width = int(input("What is the width of the rectangle?"))
9  # Why does the code in line 8 have int before the input()? int(input()
10
11 perimeter = 2 * (length + width)
12 # what is the value of the perimeter?
13
14 print("The perimeter is " + perimeter)
15 # write exactely how do you expect the output of the print statement
```

NOW: Test the program repli.it and see if your prediction is correct

WHAT HAPPENS??????

```
    print("The perimeter is " + perimeter)
TypeError: can only concatenate str (not "int") to str
>
```

BIG REVEAL_ SPIRAL BACK TO PREVIOUS LESSONS ABOUT DATA TYPES AND CONCATENATION

HOW CAN WE FIX THE ERROR?

BIG REVEAL: Two way to fix the error
concatenate (+): convert back the int to str -> + str(perimeter)

Use the comma instead of +

SUMMARY

BIG IDEA

The default output of the user input is a string. That's why we need to wrap an int around the user input statement

Concatenate in the print statement (str to str). We need to convert back int to string

We can Perform basic arithmetic operations in Python (addition, multiplication, and division)

Class Notes-BASIC OPERATION IN PYTHON

Mathematical Operations

Python provides the capability to perform basic arithmetic operations such as addition and multiplication.

Parenthesis	(.....)	Exponents	**
Multiplication	*	Division	/
Addition	+	Subtraction	-

Advanced Operations

For more advanced operations, you must import the **math** library using:

```
1    import math
```

Square Root	math.sqrt(x)	**Trig**	math.sin(x)
Abs Value	math.fabs(x)	**Degrees**	math.degrees()
Log	math.log(x,base)	**Pi**	math.pi