BUSINESS & COMPUTER SCIENCE/BUSINESS MANAGEMENT
Computer Programming with Python
Unit 2: Types, Variables, Input, and Output

Essential Understandings	- Computers repeatedly follow the instructions provided by programmers. - One can control text formatting using Python. - Python will perform math for the user. - One can learn to use variables in Python to store data in the computer and to access and manipulate that data. - One can create interactive programs using Python.
Essential Questions	- How does Python transfer input from the user to output on a screen and/or printer? - How are variables used to store, access and manipulate data? - Can Python be used to create programs that perform math? - What are the methods and tools in Python to format text?
Essential Knowledge	- Python 3.1 uses the input statement to get strings that the user enters on the keyboard. - Python 3.1 uses a cast (int) to pull numbers out of user input. - Variables are storage and retrieval points for data. - Math operators in Python come in a wide variety of formats beyond simple (+ - * /). - Python uses a variety of print conventions to format text, including single quoted text, triple quoted text, comma delimited compound statements, and comments.
Vocabulary	- Terms: - input, variables, data types, constants, print, save, strings, integers, mathematical operators
Essential Skills	- Use a variety of input and output methods. - Store information in variables. - Manipulate data and perform math using variables.

Related Maine Learning Results	Mathematics
	A. Number
	    Real Number
	    A1.Students will know how to represent and use real numbers. a. Use the concept of nth root. b. Estimate the value(s) of roots and use technology to approximate them. c. Compute using laws of exponents. d. Multiply and divide numbers expressed in scientific notation. e. Understand that some quadratic equations do not have real solutions and that there exist other number systems to allow for solutions to these equations.

Sample Lessons And Activities	*Trust Fund Buddy* program inputs information from the user, stores in variables, performs math calculations, outputs results. *Tipper Program* inputs restaurant bill, calculate two possible tip amounts and outputs the results.

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Sample Classroom Assessment Methods	▪ Create "*Fahrenheit_to_Celsius, Miles_to_Centimeters*" programs ▪ 80 point quiz
Sample Resources	▪ Publications: ○ Python Programming for the Absolute Beginner – Michael Dawson