Unit 6 - *Working with Strings*

Overview

This unit marks a shift in the course from a focus on learning the building blocks of computer programming to using those building blocks to solve problems. In this unit, students are exposed to many of the built-in methods of the String class, and then use these methods to solve challenges involving strings that require many of the skills they've learned in prior units.

21st Century Capacities: Analyzing, Synthesizing

Stage 1 - Desired Results

ESTABLISHED GOALS/ STANDARDS	
MP 1 Make sense sense of problems and persevere in solving them **MP4** Model with Computer Science **MP5** Use appropriate tools strategically **MP8** Look for and express regularity in repeated reasoning	***Transfer:*** *Students will be able to independently use their learning in new situations to...* 1. Make sense of a problem, initiate a plan, execute it, and evaluate the reasonableness of the solution. (Analyzing) 2. Use appropriate tools to make reaching solutions more efficient, accessible and accurate. (Synthesizing) 3. Apply familiar mathematical concepts to a new problem or apply a new concept to rework a familiar problem. (Synthesizing)

	Meaning:	
	UNDERSTANDINGS: *Students will understand that:*	ESSENTIAL QUESTIONS: *Students will explore & address these recurring questions:*
	1. Effective problem solvers work to make sense of the problem before trying to solve it 2. Computer Scientists identify relevant tools, strategies, relationships, and/or information in order to draw conclusion 3. Computer Scientists continually evaluate their process and the reasonableness of the intermediate results.	A. How does a problem solver think? B. How can I break a problem down into manageable parts? C. What is another way that this problem could be solved? D. How do I decide if my output makes sense, and if not, what do I do? E. What is the most efficient way to solve this

	4. Computer Scientists can describe patterns, relations, and/or functions to access strategies to solve problems.	problem?

Acquisition:	
Students will know…	*Students will be skilled at…*
1. What a string is 2. How to iterate through all of the characters in a string using several different techniques 3. How to create a list of strings 4. How to return a list of strings from a function 5. That a string is a collection of characters that can be searched and manipulated 6. That strings are immutable 7. Vocabulary: string, character, array, list, module, class, method, parse, index, shared, algorithm	1. Using many of the built-in string methods to construct new strings from existing strings 2. Working with module and class files 3. Creating public functions 4. Decomposing a problem into smaller parts 5. Passing strings as arguments to functions 6. Returning strings from functions