Course Title – Computer Programming I

Implement start year – 2014-2015

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Unit #4, topic – Sequential Files

Students will be able to independently use their learning to access and store data to and from external files.

Stage 1 – Desired Results

Established Goals

2009 NJCCC Standard(s), Strand(s)/CPI #
(http://www.nj.gov/education/cccs/2009/final.htm)

Common Core Curriculum Standards for Math and English
(http://www.corestandards.org/)

NJ World Class Standards
Content Area: 21st Century Life and Careers
(http://www.state.nj.us/education/cccs/standards/9/9-4-K.htm)

9.4.12.K.66 Employ information management techniques and strategies to assist in decision-making

9.4.12.K.(3).8 Participate in a user-focused design and development process to produce Web-based and digital communication solution

9.4.12.K.(3).13 Test a digital communication product to evaluate its functionality

9.4.12.K.(4).1 Identify and analyze customer software needs and requirements to guide programming and software development

9.4.12.K.(4).2 Create and use information technology strategies and projects plans when solving specific problems to deliver a product that

21st Century Themes
(www.21stcenturyskills.org)

- ☒ Global Awareness
- ☐ Financial, Economic, Business and Entrepreneurial Literacy
- ☐ Civic Literacy
- ☐ Health Literacy
- ☐ Environmental Literacy

21st Century Skills

Learning and Innovation Skills:

- ☒ Creativity and Innovation
- ☒ Critical Thinking and Problem Solving
- ☒ Communication and Collaboration

Information, Media and Technology Skills:

- ☐ Information Literacy
- ☐ Media Literacy
- ☐ ICT (Information, Communications and Technology) Literacy

Life and Career Skills:

- ☒ Flexibility and Adaptability
- ☐ Initiative and Self-Direction
- ☐ Social and Cross-Cultural Skills
- ☒ Productivity and Accountability

meets customer specifications 9.4.12.K.(4).3 Identify and analyze system and software requirements to ensure maximum operating efficiency 9.4.12.K.(4).4 Demonstrate the effective use of software development tools to develop software applications 9.4.12.K.(4).5 Use the software development process to design a software and deliver it to the customer 9.4.12.(4).6 Produce a computer application, in code, to demonstrate proficiency in developing an application using the appropriate programming language 9.4.12.K.(4).7 Implement software testing procedures to ensure quality products 9.4.12.K.(4).8 Perform quality assurance tasks to produce quality products. 9.4.12.K.(4).9 Perform maintenance and customer support functions to maintain software applications.	☐ Leadership and Responsibility
Enduring Understandings: *Students will understand that . . .* *EU 1* • Programs can interface with external files.	**Essential Questions:** *EU 1* • How do programs access external files? • What are the benefits of accessing external files?
Knowledge: *Students will know . . .* *EU 1* • the process to access external files • the process to create, overwrite or append an external file from within a program	**Skills:** *Students will be able to . . .* *EU 1* • Read data from external files • Save data to an external file • Create an external file from within a program

	• Extract data from an external file • Evaluate weather there is data in an external file from within the program

Stage 2 – Assessment Evidence

Recommended Performance Tasks: *Each unit must have at least 1 Performance Task. Each EU must be addressed in a performance task. Consider the GRASPS form.*

Other Recommended Evidence: *Tests, Quizzes, Prompts, Self-assessment, Observations, Dialogues, etc.*

- Flow charts including program flow and looping processes
- Pseudo code: a handwritten version of the program where the code is not written in full but rather an idea of the program flow is hashed out on paper
- Algorithms: Written code of the mathematical process that will allow data to be put into an array and sorted. The mathematical process of searching for data using different techniques.
- Test/quizzes

- Class discussion
  Program maintenance. Revising a program to adjust to the needs of different data types and number of data members

Stage 3 – Learning Plan

Suggested Learning Activities to Include Differentiated Instruction and Interdisciplinary Connections: *Consider the WHERETO elements. Each learning activity listed must be accompanied by a learning goal of A= Acquiring basic knowledge and skills, M= Making meaning and/or a T= Transfer.*

- Save information provided by the user into an existing text file
- Recall information pre-saved into an existing text file
- Create and save into a file created from within the program
- Input information into an existing text file, while preserving information that is already in file
- Delete a text file from within the program

The following is the suggested sequence of learning activities and number of days for the Computer Programming I Class.
(Approximate number of days 16)

- External Files: Declare variables for external file access
- External Files: Locate external file to be accessed
- External Files: Declare the path for the External file
- Sequential Files: Read from an external file
- Sequential Files: Create an external file manually and at run time
- Sequential Files: Write to an external file thru the program output
- External Files: Keep track of the data in the external file
- Exiting Methods: Cut the ties between a program and an external file

Vocabulary

- Overwrite
- File Path
- Append
- Random Access
- Peek Method
- Extract
- Sequential
- Default location
- File address