Course Title: Computer Science II

Topic/Concept: Fundamentals

Time Allotment: 4 Weeks

Unit Sequence: 1

Major Concepts to be learned:

1. Coding Guidelines
2. Pseudo-code
3. Object-Oriented Programming
4. Input/Ouput
5. Code blocks

Expected Skills to be demonstrated:

1. Write a test plan for the flow and outcome of a program.
2. Write pseudo code for a problem scenario that will be converted into a programming language in the next step.
3. Understand the reason and basics of object oriented programming
4. Use input and output commands to receive and display datause braces to write blocks of code

PA Standards/Anchors:	Eligible Content:
3.7.10.C 3.7.10.D	• 3.7.10.C • 3.7.10.D

Instructional Strategies:	Assessments:
Problem solving activities Lecture Performance task Note Taking Evaluating	• Program projects • Quiz • Teacher Observation

Course Title: Computer Science II

Topic/Concept: Data Types and Operators

Time Allotment: 5 Weeks

Unit Sequence: 2

Major Concepts to be learned:

1. Data types
2. Literals
3. Arithmetic/Logical Operators
4. Assignments
5. Casting

Expected Skills to be demonstrated:

1. Create a C++ project and apply the concepts of the unit.
2. Write code to solve specific problems.
3. Continuously evaluate, review, and refine program to ensure the success of the task

PA Standards/Anchors:	Eligible Content:
3.7.10.C 3.7.10.D	• 3.7.10.C • 3.7.10.D

Instructional Strategies:	Assessments:
Problem solving activities Lecture Performance task Note Taking Evaluating	• Program projects • Quiz • Teacher Observation

Course Title: Computer Science II

Topic/Concept: Program control Statements

Time Allotment: 5 Weeks

Unit Sequence: 3

Major Concepts to be learned:

1. If/Switch Statements
2. For/While/Do Loops
3. Nesting
4. Goto Statement

Expected Skills to be demonstrated:

1. Create a C++ project and apply the concepts of the unit.
2. Write code to solve specific problems.
3. Continuously evaluate, review, and refine program to ensure the success of the task

PA Standards/Anchors:	Eligible Content:
3.7.10.C 3.7.10.D	• 3.7.10.C • 3.7.10.D

Instructional Strategies:	Assessments:
Problem solving activities Lecture Performance task Note Taking Evaluating	• Program projects • Quiz • Teacher Observation

Course Title: Computer Science II

Topic/Concept: Arrays, Strings, Pointers

Time Allotment: 5 Weeks

Unit Sequence: 4

Major Concepts to be learned:

1. Arrays
2. Strings
3. Pointers

Expected Skills to be demonstrated:

1. Create a C++ project and apply the concepts of the unit.
2. Write code to solve specific problems.
3. Continuously evaluate, review, and refine program to ensure the success of the task.

PA Standards/Anchors:	Eligible Content:
3.7.10.C 3.7.10.D	• 3.7.10.C • 3.7.10.D

Instructional Strategies:	Assessments:
Problem solving activities Lecture Performance task Note Taking Evaluating	• Program projects • Quiz • Teacher Observation

Course Title: Computer Science II

Topic/Concept: Mathematical Problem Solving

Time Allotment: Ongoing weekly

Unit Sequence: 5

Major Concepts to be learned:

1. Open-Ended Problem Solving

Expected Skills to be demonstrated:

1. Solve open-ended questions based on the Pennsylvania Academic Standards Anchors

PA Standards/Anchors:

2.2.11	2.3.11	2.4.11
2.5.11	2.6.11	2.7.11
2.8.11	2.9.11	

Eligible Content:

- Computation and Estimation
- Measurement and Estimation
- Mathematical Reasoning and Connections
- Mathematical Problem Solving and Communication
- Statistics and Data Analysis
- Probability and Predictions
- Algebra and Functions
- Geometry

Instructional Strategies:

Problem solving activities
Lecture
Performance task

Assessments:

- Quizzes
- Tests
- Teacher Observation