SUBJECT: AP Computer Science Applications	GRADE: 11-12
Unit Title: Using Objects and Methods	**Time Frame: Summer Work and First Marking Period**
UNIT OVERVIEW	
This unit begins with an overview of algorithms, programming and compilers. Students then delve into variables, data types and expressions. Students study method signatures, class methods and object instantiation.The math class is introduced	
LRG SKILLS AND DISPOSITIONS	**PA STANDARDS**
Critical Thinking and Problem Solving: Rectangle Class(S4C)	**HS-ALG-8** **HS-ALG-9** **HS-ALG-10** **HS-PRO-12** **HS-PRO-21**
COMPETENCIES	**LEARNING TARGETS**
I can analyze the impacts of algorithms and design	• I can understand and evaluate the impact that algorithms have on society as a whole
I can develop and understand programs to accomplish a task	• I can use existing code, such as libraries, to write and improve programs
I can handle data	• I can compare different data types and their uses

SUBJECT: AP Computer Science Applications	GRADE: 10-12
Unit Title: Selection and Iteration	**Time Frame: Second Marking Period**
UNIT OVERVIEW	
This unit begins with algorithms that incorporate selection and repetition. Students then dive into Boolean expressions and their use in if and nested if statements. Students learn how to use looping structures such as while and for loops, including nested iteration	
LRG SKILLS AND DISPOSITIONS	**PA STANDARDS**
Critical Thinking and Problem Solving: Finding Palindromes (S4C)	**HS-ALG-1** **HS-PRO-12** **HS-PRO-15** **HS-PRO-16**
COMPETENCIES	**LEARNING TARGETS**
I can use algorithms and problem solving to accomplish tasks	• I can create procedures that use sequence • I can create procedures that use iteration • I can create procedures that use selection

I can develop and understand programs to accomplish a task	● I can use documentation to debug and improve programs ● I can take pseudocode and create a working program that includes sequence, iteration, selection, variables, procedures, parameters, and data structures
I can read and document code	● I can analyze how a segment of code works. including the role of sequence, iteration, selection, and variables

SUBJECT: AP Computer Science Applications	**GRADE: 10-12**
Unit Title: Class Creation	**Time Frame: Third Marking Period**
UNIT OVERVIEW	
In this unit students will develop a deep understanding of designing and creating their own classes. Students focus on creating efficient, maintainable and scalable code. Students learn about constructors, methods, and the keyword THIS	
LRG SKILLS AND DISPOSITIONS	**PA STANDARDS**
Critical Thinking and Problem Solving: Dragon Class (S4C)	HS-ALG-2 HS-ALG-3 HS-PRO-11 HS-PRO-12 HS-PRO-16
COMPETENCIES	**LEARNING TARGETS**
I can use algorithms and problem solving to accomplish tasks	● I can evaluate algorithms for efficiency and clarity ● I can evaluate algorithms for correctness ● I can use abstraction to create procedures ● I can use abstraction to create classes and objects
I can develop and understand programs to accomplish a task	● I can create programs that use procedures to improve reusability and readability ● I can create programs that use objects/classes to improve reusability and readability ● I can use documentation to debug and improve programs
I can read and document code	● I can analyze how a segment of code works including the role of procedures and parameters

SUBJECT: AP Computer Science Applications	GRADE: 10-12
Unit Title: Data Collection	**Time Frame: Fourth Marking Period**
UNIT OVERVIEW	
In this unit students focus on data collection structures and algorithms, focusing on their creation, manipulation and application. The unit includes arrays, ArrayLists, and 2D arrays. It also covers recursion, searching and sorting algorithms	
LRG SKILLS AND DISPOSITIONS	**PA STANDARDS**
Critical Thinking and Problem Solving: TicTacToe (S4C)	HS-ALG-3 HS-PRO-12 HS-PRO-15 HS-PRO-16 HS-PRO-20
COMPETENCIES	**LEARNING TARGETS**
I can use algorithms and problem solving to accomplish tasks	● I can use abstraction to create lists
I can develop and understand programs to accomplish a task	● I can use existing code, such as libraries, to write and improve programs ● I can use documentation to debug and improve programs ● I can take pseudocode and create a working program that includes sequence, iteration, selection, variables, procedures, parameters, and data structures.
I can read and document code	● I can analyze how a segment of code works, including the role of data structures
I can handle data	● I can use data structures to store, access and manipulate data