ELIZABETH PUBLIC SCHOOLS
Every child, Achieving Excellence

Marking Period 1 (MP1)	Science Curriculum Pacing Guide Grade HS FORENSIC SCIENCE
MP1 **Standards for Science Content**	HS-ETS1-1 Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants. HS-ETS1-2 Design a solution to a complex real-world problem by breaking it down into a smaller, more manageable problems that can be solved through engineering. HS ETS1-3 Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts. HS-ETS1-4 Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.
MP1 **Topics**	Introduction to Forensic Science and Human Body Introduction to Forensic Science and the Law, Types of Evidence, & Crime Scene Investigation Finger Prints Hair as Evidence
MP1 **Skills/Concepts**	Solving mysteries is a challenge many people enjoy. If they take a scientific approach, they are likely to use forensic sciences to examine evidence and to solve crimes. A forensics team is a group of scientists who work together performing different jobs to solve crimes or to identify people. A forensics team may observe the crime scene and gather evidence such as hair and fiber samples, fingerprints, and tissue samples.
MP1 **Core Materials**	Pearson - Mastering Mylab Criminal Justice

Marking Period 2 (MP2)	Science Curriculum Pacing Guide Grade HS FORENSIC SCIENCE
MP2 **Standards for Science Content**	HS-ETS1-2 Design a solution to a complex real-world problem by breaking it down into a smaller, more manageable problems that can be solved through engineering HS-LS1-1 Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells. HS-LS1-2 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms. HS-LS3-3 Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population HS-PS1-1 Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms. HS-PS1-2 Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
MP2 **Topics**	Blood DNA Analysis Human Remains Fibers
MP2 **Skills/Concepts**	Evidence refers to information or objects that may be admitted into court for judges and juries to consider when hearing a case. Evidence can come from varied sources — from genetic material or trace chemicals to dental history or fingerprints. Evidence can serve many roles in an investigation, such as to trace an illicit substance, identify remains or reconstruct a crime.
MP2 **Core Materials**	Pearson - Mastering Mylab Criminal Justice

Marking Period 3(MP3)	Science Curriculum Pacing Guide Grade HS FORENSIC SCIENCE
MP3 **Standards for Science Content**	HS-ETS1-2 Design a solution to a complex real-world problem by breaking it down into a smaller, more manageable problems that can be solved through engineering. HS-LS1-2 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms. HS-PS1-1 Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms. HS-PS1-2 Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties. HS-PS1-3 Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles. HS-PS1-4. Develop a model to illustrate that the release or absorption energy from chemical reaction system depends upon the changes in total bond energy. HS-PS1-7 Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction. HS-PS4-1 Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media. HS-ESS2-1 Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.
MP3 **Topics**	Drugs Toxicology Trace Evidence Soil & Glass Analysis
MP3 **Skills/Concepts**	The scene of a crime often yields a large amount of trace evidence that has come from contact between the perpetrator and his or her surroundings. The importance of collecting and analyzing trace evidence comes from Edmond Locard's Exchange Principle, which states that every contact leaves a trace. That is, criminals leave something of themselves, such as clothes fibers, glass pieces, behind at the crime scene, and they also take something away with them from their contact with people and objects there
MP3 **Core Materials**	Pearson - Mastering Mylab Criminal Justice

Marking Period 4(MP4)	Science Curriculum Pacing Guide Grade HS FORENSIC SCIENCE
MP4 **Standards for Science Content**	HS-ETS1-2 Design a solution to a complex real-world problem by breaking it down into a smaller, more manageable problems that can be solved through engineering. HS-LS1-1 Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells. HS-LS1-2 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms. HS-LS1-4 Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms. HS-PS1-1 Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms. HS-PS1-2 Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties. HS-PS1-5 Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentrations of the reacting particles on the rate at which a reaction occurs. HS-PS3-4 Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system
MP4 **Topics**	Firearms, Toolmarks, and Impressions Document and Handwriting Analysis Forensic Entomology
MP4 **Skills/Concepts**	Forensic laboratories play a vital role in Criminal Justice System. Forensic disciplines, from document analysis to firearms examination to DNA analysis, increasingly are relied upon by law enforcement to solve crime and by district attorneys to prosecute offenders. In particular, the development of new technologies and of state and federal offender databases (for fingerprints, DNA and firearms) are greatly expanding the demand for forensic analysis of unsolved cases.
MP4 **Core Materials**	Pearson - Mastering Mylab Criminal Justice