Grade & Course: Forensic Science	**Topic:** Unit 11 Death Investigation	**Duration:** 2 Weeks
Teachers: Forensic PLC Teachers		

Georgia Standards and Content:
SFS5. Obtain, evaluate, and communicate information to Medicolegal Death Investigations.
a. Ask questions to identify various causes and mechanisms of death (blunt force trauma, heart attack, bleeding, etc.).
b. Construct an argument based on evidence that pertains to the manner of death (natural, homicide, suicide, accidental, or undetermined).
c. Use mathematics and computational thinking to explain post-mortem changes used to determine post-mortem interval (PMI):
• Rigor mortis
• Livor mortis
• Algor mortis
• Gastric contents
(Clarification statement: Instruction should include the historical use of Algor Mortis as it is often not used by practicing forensic specialists.)

Narrative / Background Information

Prior Student Knowledge: (REFLECTION – PRIOR TO TEACHING THE UNIT)
S7L2. Obtain, evaluate, and communicate information to describe how cell structures, cells, tissues, organs, and organ systems interact to maintain the basic needs of organisms.
SB1. Obtain, evaluate, and communicate information to analyze the nature of the relationships between structures and functions in living cells.

Year-Long Anchoring Phenomena: (LEARNING PROCESS)
An unidentified body was found in the back seat of a wrecked vehicle where the driver had fled the scene and the passenger was injured.

Unit Phenomena (LEARNING PROCESS)
An unidentified body was found in the back seat of a wrecked vehicle where the driver had fled the scene and the passenger was injured.

Inquiry Statement:
Bacteria, Archaea, and microbial eukaryotes are used to provide insight into several aspects of medicolegal death investigations.

Global Context:
Scientific and Technical Innovation

Science & Engineering Practices:	**Disciplinary Core Ideas:** **(KNOWLEDGE & SKILLS)**	**Crosscutting Concepts:** **(KNOWLEDGE & SKILLS)**
● Asking Questions ● Constructing Arguments Based on Evidence ● Using Mathematics and Computational Thinking ● Analyzing and Interpreting Data ● Planning and Carrying Out an Investigation	● Mechanisms of death ● Manner of death ● Post-mortem changes	● Structure and Function ● Systems and System Models **Key and Related Concepts:** Connections Patterns

Possible Preconceptions/Misconceptions: (REFLECTION – PRIOR TO TEACHING THE UNIT)
- Crime Scene investigators can determine valuable information about the moments leading up to a victim's death.
- Death is an instant process and happens rapidly.
- The scene where a dead body is found can greatly affect how it is preserved.
- There are many factors that affect when rigor mortis sets in and how long it lasts.

Key Vocabulary: (KNOWLEDGE & SKILLS)
- adipocere
- algor mortis
- autolysis
- autopsy
- cause of death
- coroner
- decomposition
- forensic pathologist
- livor mortis
- manner of death
- mechanism of death
- medicolegal death investigators
- medical examiner
- petechial hemorrhages
- proximate cause of death
- putrefaction
- rigor mortis

Inquiry Questions:

Factual -

What is Rigor mortis?

What is Livor mortis?

What is Algor mortis?

What is the difference between homicide and suicide?

What post-mortem changes occur when a person dies?

Conceptual –

How is time of death using rigor mortis determined?

How is time of death using liver mortis determined?

How is time of death using algor mortis determined?

How can we determine the actual cause of death?

How does the environment the body is left in affect the post mortem changes?

Debatable -

Should forensic scientists continue to use current methods in determining causes of death and time of death?

	Summative assessment

Unit Objectives:

Learning Activities and Experiences	Inquiry & Obtain: (LEARNING PROCESS)	Evaluate: (LEARNING PROCESS)	Communicate: (LEARNING PROCESS)

Week 1:	**Phenomenon:** Live crash scene. Unconscious individual in front seat, driver missing, body in back seat. **Major Projects:** ● Crime Scene/Death Investigation Culminating Project Day 1 (secure scene, interview witnesses- criminal investigations class, and collect evidence-forensics class)	● Crime Scene/Death Investigation Culminating Project Day 2 (process evidence in lab-forensic science)	● Crime Scene/Death Investigation Culminating Project Day 3 (watch videos/begin report writing) ● Medicolegal Death Investigation Notes
Week 2:	● Crime Scene/Death Investigation Culminating Project Day 4 (report writing)	● Crime Scene/Death Investigation Culminating Project Day 5 (wrap up discussion) ● Wrap Up Final Report Writing	

Resources (hyperlink to model lessons and/or resources):

- Textbook Forensic Science Bertino & Bertino, 3rd Edition
- Forensic Science Schoology Course
- Additional resources can be found in the common Schoology group under the Unit 11 folder.

Reflection: Considering the planning, process and impact of the inquiry

Prior to teaching the unit	During teaching	After teaching the unit
● Contact police department about car being delivered (notify admin as well)	(click here)	(click here)