

Forensics : Unit 1 History and Crime Scenes

Stage 1 Desired Results		
ESTABLISHED GOALS: <u>Competencies:</u> - Students will demonstrate the ability to observe and describe patterns in natural and human designed phenomena and use those patterns to support claims about the observed or predicted relationships among phenomena. - Students will demonstrate the ability to investigate, explain, and evaluate potential causal relationships by using evidence to support claims and predictions about the mechanisms that drive those relationships. - Students will demonstrate the ability to investigate and analyze a natural or human designed system in terms of its boundaries, inputs, outputs, interactions, and behaviors and use this information to develop a system model that can be used to understand and empirically evaluate the accuracy of models in terms of representing the underlying system. - Students will demonstrate the ability to investigate and analyze static and dynamic conditions of natural and human designed systems in order to explain and predict changes over time. - Student will demonstrate the ability to work collaboratively and individually to generate testable questions or define problems, plan and conduct investigations using a variety of research methods in a various settings, analyze and interpret data, reason with evidence to construct explanations in light of existing theory and previous research, and effectively communicate the research processes and conclusions. - Students will demonstrate ability to analyze and summarize text and integrate knowledge to make meaning of discipline-specific materials. - Students will demonstrate the ability to produce coherent and supported writing in order to communicate effectively for a range of discipline-specific tasks, purposes, and audiences. - Students will demonstrate the ability to speak purposefully and effectively by strategically making decisions about content, language use, and discourse style. <u>Content Standards:</u> - HS-LS1-1 Construct an explanation based on valid and reliable evidence obtained from a variety of sources (including student's	Transfer	
	Students will be able to independently use their learning to recognize the importance of properly following a process and documentation of actions.	
	Meaning	
	ENDURING UNDERSTANDINGS Students will understand that... - the principles of scientific method are required in ALL forensic science analysis. - Locard's exchange principle is critical in forensic science. - Physical evidence is crucial in linking victims and suspects to a crime scene. - Physical evidence must be collected in a specific and strategic manner, as well as systematically documented, in order to ensure that no tampering or contamination occurs. - the importance of following procedures and documentation in evidence collection.	ESSENTIAL QUESTIONS - Does evidence lead to a suspect or does a suspect lead to evidence? - Is it really possible to "leave no trace"?
	Acquisition	
	Students will know... - that there are basic as well as specialized services offered by forensic laboratories. - that there are major disciplines within forensic science. - that forensic science has changed over time. - that there are fundamental aspects of crime scene investigations. - that forensic science follows the principles of scientific method and the need for collecting control samples at every crime scene.	Students will be skilled at... -Constructing and revising explanations -Developing models -Applying scientific principles and evidence to provide an explanation -refining the design of a system -using mathematical representation -planning and conducting investigations -communicating scientific and technical information -Quantifying results -performing basic statistical analysis

own investigations, models, theories, simulations, peer review) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future. ● HS-LS1-2 Develop and use a model based on evidence to illustrate the relationship between systems or between components of a system ● HS-LS2-1 Use mathematical and/or computational representation of phenomena or design solutions to support explanations ● HS-LS2-2 Use mathematical representations of phenomena or design solutions to support and revise explanations. ● HS-LS1-3 Plan and conduct an investigation individually and collaboratively to produce data to service as a basis for evidence, an in the design: decide on types, how much, and accuracy of data needed to produce reliable measurements and consider limitations on precision of the data (e.g., number of trials, cost, risk, times), and refine the design accordingly. ● HS-LS2-5 develop a model based on evidence to illustrate the relationship between systems or components of a system ● HS-LS2-6 Evaluate the claims, evidence and reasoning behind currently accepted explanations of solutions to determine the merits of arguments. ● HS-LS2-8 Evaluate the evidence behind currently accepted explanations or solutions to determine the merits of arguments ● HS-LS3-1 Ask questions that arise form examining models or a theory to clarify relationships. ● HS-LS3-2 make and defend a claim based on evidence about the natural world that reflected scientific knowledge, and student generated evidence. ● HS-LS3-3 Apply concepts of statistics and probability to scientific and engineering questions and problems, using digital tools when feasible ● HS-LS4-6 Create or revise a simulation of a phenomenon, designed device , process, or system. ● HS-PS1-7 Scientific knowledge assumes an order and consistency in natural systems science assumes the universe is a vast single system in which basic laws are consistent. ● HS-ESS1-3 Communicate scientific ideas (e.g. about phenomena and/or the process of development and the design and performance of a proposed process or system) in multiple formats (including orally, graphically, textually, and mathematically).	<u>vocabulary:</u> <i>forensic science, Locard’s principle, suspect, victim, quadrant, anthropology, pathology, chain of custody, Frye Standard,</i>	
Content Area Literacy Standards		21st Century Skills
● RST.11-12.1 CITE SPECIFIC TEXTUAL EVIDENCE TO SUPPORT ANALYSIS OF SCIENCE AND TECHNICAL TEXTS, ATTENDING TO IMPORTANT DISTINCTIONS THE AUTHOR MAKES AND TO ANY GAPS OR INCONSISTENCIES IN THE ACCOUNT. ● RST.11-12.2 DETERMINE THE CENTRAL IDEAS OR CONCLUSIONS OF A TEXT; SUMMARIZE COMPLEX CONCEPTS, PROCESSES, OR INFORMATION PRESENTED IN A TEXT BY PARAPHRASING THEM IN SIMPLER BUT STILL ACCURATE TERMS.		● <i>Use systems thinking</i> ● <i>solve problems</i> ●

- **RST 11-12.3** FOLLOW PRECISELY A COMPLEX MULTISTEP PROCEDURE WHEN CARRYING OUT EXPERIMENTS, TAKING MEASUREMENTS, OR PERFORMING TECHNICAL TASKS; ANALYZE THE SPECIFIC RESULTS BASED ON EXPLANATIONS IN THE TEXT.
- **RST.11-12.4** DETERMINE THE MEANING OF SYMBOLS, KEY TERMS, AND OTHER DOMAIN-SPECIFIC WORDS AND PHRASES AS THEY ARE USED IN A SPECIFIC SCIENTIFIC OR TECHNICAL CONTEXT RELEVANT TO GRADES **11-12** TEXT AND TOPICS
- **RST.11-12.7** INTEGRATE AND EVALUATE MULTIPLE SOURCES OF INFORMATION PRESENTED IN DIVERSE FORMATS AND MEDIA (E.G. QUANTITATIVE DATA, VIDEO, MULTIMEDIA) IN ORDER TO ADDRESS A QUESTION OR SOLVE A PROBLEM.
- **RST11-12.8** EVALUATE THE HYPOTHESIS, DATA, ANALYSIS AND CONCLUSIONS IN A SCIENCE OR TECHNICAL TEXT, VERIFYING THE DATA WHEN POSSIBLE AND CORROBORATING OR CHALLENGING CONCLUSIONS WITH OTHER SOURCES OF INFORMATION
- **RST.11-12.9** SYNTHESIZE INFORMATION FROM A RANGE OF SOURCES (E.G. TEXTS, EXPERIMENT, SIMULATIONS) INTO A COHERENT UNDERSTANDING OF A PROCESS, PHENOMENON, OR CONCEPT, RESOLVING CONFLICTING INFORMATION WHEN POSSIBLE.
- **WHST 11-12.2** WRITE INFORMATIVE/ EXPLANATORY TEXTS INCLUDING THE NARRATION OF HISTORICAL EVENTS, SCIENTIFIC PROCEDURES/ EXPERIMENT, OR TECHNICAL PROCESSES.
- **WHST.11-12.7** CONDUCT SHORT AS WELL AS MORE SUSTAINED RESEARCH PROJECTS TO ANSWER A QUESTION (INCLUDING A SELF-GENERATED QUESTION) OR SOLVE A PROBLEM; NARROW OR BROADEN THE INQUIRY WHEN APPROPRIATE; SYNTHESIZE MULTIPLE SOURCES ON THE SUBJECT; DEMONSTRATING UNDERSTANDING OF THE SUBJECT UNDER INVESTIGATION
- **WHST.11-12.9** DRAW EVIDENCE FROM INFORMATIONAL TEXTS TO SUPPORT ANALYSIS, REFLECTION AND RESEARCH.
- **WHST.11-12.6** USE TECHNOLOGY, INCLUDING THE INTERNET, TO PRODUCE, PUBLISH, AND UPDATE INDIVIDUAL OR SHARED WRITING PRODUCTS IN RESPONSE TO ONGOING FEEDBACK, INCLUDING NEW ARGUMENTS OR INFORMATION.

Stage 2 - Evidence	
<i>Evaluative Criteria</i>	<i>Assessment Evidence</i>
	PERFORMANCE TASK(S):
	OTHER EVIDENCE:

Stage 3 – Learning Plan	
Summary of Key Learning Events and Instruction	
<i>Language Arts Integration</i>	<i>Mathematics Integration</i>
1.OA.1 Use	- HSN-Q.A.1 USE UNITS AS A WAY TO UNDERSTAND PROBLEMS AND TO GUIDE THE SOLUTION OF MULTI-STEP PROBLEMS; CHOOSE AND INTERPRET UNITS CONSISTENTLY IN FORMULAS; CHOOSE AND INTERPRET THE SCALE AND THE ORIGIN IN GRAPHS AND DATA DISPLAYS. - HSN-Q.A.2- DEFINE APPROPRIATE QUANTITIES FOR THE PURPOSE OF DESCRIPTIVE MODELING - HSN-Q.A.3 CHOOSE A LEVEL OF ACCURACY APPROPRIATE TO LIMITATIONS ON MEASUREMENT WHEN REPORTING QUANTITIES - MP.2 REASON ABSTRACTLY AND QUANTITATIVELY - MP.4 MODEL WITH MATHEMATICS
<i>Technology Integration</i>	<i>District Materials</i>
1.OA.1 Use	

<i>Science and Engineering Practices</i>	
S&EP 1. Asking questions and defining problems S&EP 2. Developing and using models S&EP 3. Planning and carrying out investigations S&EP 4. Analyzing and interpreting data S&EP 5. Using mathematics and computational thinking S&EP 6. Constructing explanations (for science) and designing solutions (for engineering) S&EP 7. Engaging in argument from evidence S&EP 8. Obtaining, evaluating and communicating information	