April Forensics and Crime Scene Investigation Grade 7

Content Area: **Gifted and Talented**
Course(s):
Time Period: **April**
Length: **6-8 Weeks**
Status: **Published**

Unit Overview

Students will learn about forensics and how crime scene investigators perform their duties.

Enduring Understandings

• Forensic Science involves many different disciplines. It incorporates many science subjects such as biology, chemistry, physics, entomology, and other disciplines such as law and public law enforcement.

• The foundation of forensic science is scientific inquiry; develop explanations for events, test proposed explanations and provide new insights based on the tests.

Essential Questions

- How has forensic science evolved over the course of history?
- How can deductive reasoning help solve a crime?
- How does evidence collected from a crime scene help the law enforcement solve crimes?

o How is a crime scene processed?

o What types of physical evidence are found at a crime scene?

o What can blood from a crime scene tell forensic scientists?

o How can forensic scientists use trace evidence to explain what happened at a crime scene?

• How has technology aided the solving of crimes?

Instructional Strategies & Learning Activities

- Students will complete several critical challenges as "do nows" when they enter the classroom each day. They will involve observation skills and deductive reasoning. Some will be "spot the difference" type activities. Some will involve drawings with listed evidence and the students will have to determine "who did it" based on the evidence provided.

- Studens will be introduced to forensic terminology with a slide show presentation.
- Students will watch a video about the FBI Crime Lab and how crime scene investigation has changed over the years based on available technology.
- Students will participate in a field trip to a mock crime scene investigation held at another local school (when available). Students will rotate through several learning stations to investigate the fake evidence they find at the scene.
- Students will complete a finger print activity where they'll analyze their own finger print types.
- Students will complete a deductive reasoning lab where they must investigate a crime scene (in writing) and determine the guilty party, based on evidence provided.
- Students will play a matching game with forensic terminology.
- Students will complete a lab experiment where they are asked to determine the guilty party in a crime based on the blood samples found at the scene. Students will use simulated blood and test each sample for coagulation.
- Students will complete a lab where they test the chromotography of black ink pens to determine their composition.
- Students will create their own CSI. They will write the scenario where they create the suspects, crime and evidence found at the scene. They will share this CSI with the 3rd grade students in the school. Students will work in groups to create a learning station for the younger students to investigate the evidence (finger prints, chromatography, lip prints, blood typing...) Students will create a poster for their learning station and a handout to present to the younger students. They will teach the younger students about their forensic area and create a mini lab for them to do at their station. Students will create a creative introduction and final conclusion for the students to hook their interest and present the crime scene scenario.
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Integration of Career Readiness, Life Literacies and Key Skills

- Students will be introduced to many careers in the field of forensics.
- They will be asked to work collaboratively to solve problems.
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9.4.8.CI	Creativity and Innovation
9.2.8.CAP	Career Awareness and Planning
	An individual’s strengths, lifestyle goals, choices, and interests affect employment and income.
	Gathering and evaluating knowledge and information from a variety of sources, including global perspectives, fosters creativity and innovative thinking.
9.2.8.CAP.1	Identify offerings such as high school and county career and technical school courses, apprenticeships, military programs, and dual enrollment courses that support career or occupational areas of interest.
9.2.8.CAP.2	Develop a plan that includes information about career areas of interest.
9.4.8.CI.3	Examine challenges that may exist in the adoption of new ideas (e.g., 2.1.8.SSH, 6.1.8.CivicsPD.2).
9.4.8.CI.4	Explore the role of creativity and innovation in career pathways and industries.
9.4.8.CT	Critical Thinking and Problem-solving
	An essential aspect of problem solving is being able to self-reflect on why possible solutions for solving problems were or were not successful.
9.4.8.CT.3	Compare past problem-solving solutions to local, national, or global issues and analyze the factors that led to a positive or negative outcome.

9.4.8.TL	Technology Literacy Some digital tools are appropriate for gathering, organizing, analyzing, and presenting information, while other types of digital tools are appropriate for creating text, visualizations, models, and communicating with others.

Technology Integration

Use of the Smartboard and students 1:1 Chromebooks for activities.

Use of a microscope for labs.

Research on the computer for learning stations.

Interdisciplinary Connections

Scientific inquiry

Reading informational text

Writing laboratory notes, step-by-step directions, creative writing (scenario)

History of forensics investigation

Differentiation

- Understand that gifted students, just like all students, come to school to learn and be challenged.
- Pre-assess your students. Find out their areas of strength as well as those areas you may need to address before students move on.
- Consider grouping gifted students together for at least part of the school day.
- Plan for differentiation. Consider pre-assessments, extension activities, and compacting the curriculum.
- Use phrases like "You've shown you don't need more practice" or "You need more practice" instead of words like "qualify" or "eligible" when referring to extension work.
- Encourage high-ability students to take on challenges. Because they're often used to getting good grades, gifted students may be risk averse.
- **Definitions of Differentiation Components**:
    - Content – the specific information that is to be taught in the lesson/unit/course of instruction.
    - Process – how the student will acquire the content information.
    - Product – how the student will demonstrate understanding of the content.
    - Learning Environment – the environment where learning is taking place including physical location and/or student grouping

Differentiation occurring in this unit:

Process and product choice involving their own final CSI.

Leveled reading material (Newsela articles).

Modifications & Accommodations

Refer to QSAC EXCEL SMALL SPED ACCOMMOCATIONS spreadsheet in this discipline.
Modifications and Accommodations used in this unit:

Notes, graphic organizers provided for those who need.

Leveled reading material (Newslea articles).

Extension activities provided

Formative Assessments

Assessment allows both instructor and student to monitor progress towards achieving learning objectives, and can be approached in a variety of ways. **Formative assessment** refers to tools that identify misconceptions, struggles, and learning gaps along the way and assess how to close those gaps. It includes effective tools for helping to shape learning, and can even bolster students' abilities to take ownership of their learning when they understand that the goal is to improve learning, not apply final marks (Trumbull and Lash, 2013). It can include students assessing themselves, peers, or even the instructor, through writing, quizzes, conversation, and more. In short, formative assessment occurs throughout a class or course, and seeks to improve student achievement of learning objectives through approaches that can support specific student needs (Theal and Franklin, 2010, p. 151).
Formative Assessments used in this unit:

Daily do-nows to practice critical thinking

Notes to pair with video (rebus-type)

Lab experiment notes

Class discussion

Summative Assessments

Summative assessments evaluate student learning, knowledge, proficiency, or success at the conclusion of an instructional period, like a unit, course, or program. Summative assessments are almost always formally graded and often heavily weighted (though they do not need to be). Summative assessment can be used to great effect in conjunction and alignment with formative assessment, and instructors can consider a variety of ways to combine these approaches.

Summative assessments for this unit:

Final CSI learning station scored with rubric.

Instructional Materials

- Chromebooks for students
- Smartboard for projection
- Powerpoint about crime scene investigation
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- FBI Crime lab video- https://www.youtube.com/watch?v=AJhl0Bczy7M
- Fingerprints- https://www.sciencespot.net/Media/FrnsScience/fingerprintbasicscard.pdf
- Daily critical thinking challenges, resources for CSI stations (final project)- https://www.sciencespot.net/Pages/classforsci.html
- microscopes, goggles, glass slides, beakers
- chromatography paper (Flinn Scientific)
- simulated blood samples (Flinn Scientific)
- fiber samples (Flinn Scientific)
- fingerprint ink
- Flinn Scientific Detective's Casebook lab activity
- Deductive reasoning labs (xxx book)

Standards

RI.CR.7.1	Cite several pieces of textual evidence and make relevant connections to support analysis of what an informational text says explicitly as well as inferences drawn from the text.
RI.TS.7.4	Analyze the structure an author uses to organize a text and how it contributes to the text as a whole, including using knowledge of text structures (e.g., cause-effect, proposition-support) and genre features (e.g., graphics, captions, indexes) to organize and analyze

	important information.
RI.AA.7.7	Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.
W.IW.7.2.D	Use precise language and domain/grade-level-specific vocabulary to inform about or explain the topic.
W.SE.7.6	Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
W.RW.7.7	Write routinely over extended time frames (time for research, reflection, metacognition/self-correction, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.
SL.PE.7.1.A	Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.
SL.UM.7.5	Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.
	Planning and carrying out investigations in 6–8 builds on K–5 experiences and progresses to include investigations that use multiple variables and provide evidence to support explanations or solutions.