Unit 04: Questioned Document Analysis

Content Area: **Science**
Course(s):
Time Period: **Marking Period 2**
Length: **3 Weeks**
Status: **Published**

Summary

Introduction: This unit focuses on questioned document analysis. Topics covered include handwriting analysis, detection of forgeries, typewriter analysis, and paper chromatography.

Revision Date: July, 2019

MA.K-12.1	Make sense of problems and persevere in solving them.
9.2.12.CAP	Career Awareness and Planning
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
9.4.2.CT	Critical Thinking and Problem-solving
9.2.12.CAP.4	Evaluate different careers and develop various plans (e.g., costs of public, private, training schools) and timetables for achieving them, including educational/training requirements, costs, loans, and debt repayment.
9.2.12.CAP.5	Assess and modify a personal plan to support current interests and post-secondary plans.
9.2.12.CAP.6	Identify transferable skills in career choices and design alternative career plans based on those skills.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
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.
9.4.2.DC.6	Identify respectful and responsible ways to communicate in digital environments.
LA.RST.9-10.3	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
LA.RST.9-10.4	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 9-10 texts and topics.
LA.RST.9-10.7	Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
LA.WHST.9-10.1.B	Develop claim(s) and counterclaims using sound reasoning, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.
LA.WHST.9-10.1.D	Establish and maintain a style and tone appropriate to the audience and purpose (e.g., formal and objective for academic writing) while attending to the norms and conventions of the discipline in which they are writing.
LA.WHST.9-10.2.B	Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions,

	concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
LA.WHST.9-10.2.D	Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers.
LA.WHST.9-10.2.E	Establish and maintain a style and tone appropriate to the audience and purpose (e.g., formal and objective for academic writing) while attending to the norms and conventions of the discipline in which they are writing.
HS-ETS1-2	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
CRP.K-12.CRP1	Act as a responsible and contributing citizen and employee.
CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
CRP.K-12.CRP7	Employ valid and reliable research strategies.

Essential Questions/Enduring Understandings

- What is document analysis and what role does it play in forensic investigation?
- What are some of the techniques document examiners use to uncover alterations, erasures, obliterations and variation in pen inks?
- How can analyzing paper and ink lead to identification of a printer or photocopier?
- How can handwriting be studied and analyzed to find individualistic patterns?

Objectives

Students will know...

- the 12 characteristics used in analyzing handwriting.

Students will be skilled at...

- Identifying the differences in disguised handwriting.
- Analyzing typewritten samples.
- Distinguishing between the types of forgeries (traced, simulated, freehand, lifted).
- Analyzing paper and ink.

Learning Plan

- Pre-assessment to determine the direction of work
- Preview the essential questions and connect to learning throughout the unit.
- Provide lecture and opportunities for discussion about the guiding questions.
- Complete Lab on identifying the 12 writing characteristics of a known handwriting sample.
- Complete Lab on identifying the author of an unknown writing sample.

- Complete Lab on identifying the author of a disguised handwriting sample.
- Complete Lab on paper, ink analysis, typewriter analysis, and forgeries.
- Read and discuss Case studies.

Assessment

Benchmark

- Pre-assessment to determine the direction of work

Formative

- Meaningfully participate in guided question and answer sessions, group and individual discussions, show an understanding of the purpose of the unit lesson(s), and their key terms and concepts.
- Participate in classroom activities such as class discussion, question and answer session, cooperative group projects and presentation of research.

Summative

- Demonstrate the ability to identify the 12 writing characteristics of a known handwriting sample.
- Demonstrate the ability to identify the author of an unknown writing sample.
- Demonstrate the ability to identify the author of a disguised handwriting sample.
- Demonstrate the ability use various lab techniques such as paper chromatography to analyze characteristics about the paper or ink in a questioned document.
- Demonstrate understanding written quizzes and tests about subject materials.

Alternative

- Create a presentation on the Lindbergh Baby Case, outlining how questioned document analysis principles were used

Materials

- Teacher-presented notes on PowerPoint
- United Streaming short videos
- CSI Season 1