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| Unit/Chapter Number and Title: 8: Hair and Fiber | Estimated Unit Length: 2 Weeks  Date Created: August 2016 |

Unit Components/Sub-Headings

Knowledge—The students will know . . .

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| Concepts/Topics   * Jeffery McDonald * Forensic Examination of Hair * Forensic Examination of Fibers * Wayne Williams Case Analysis | Unit Vocabulary   * Anagen Phase Catagen Phase * Cortex Cuticle * Follicular Tag Macromolecule * Manufactured Fibers Medulla * Mitochondrial DNA Molecule * Monomer Natural Fibers * Nuclear DNA Polymer * Telogen Phase |

Objectives and Standards: Skills---The students will be able to . . . Assessments/Evidence

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| 1. Recognized and understand the cuticle, cortex, and medulla areas of hair. 2. List the three phases of hair growth. 3. Appreciate the distinction between animal and human hairs. 4. List hair features that are useful for microscopic comparison of human hairs 5. Explain proper collection of Forensic Hair Evidence 6. Describe and understand the role of DNA typing in hair comparisons 7. Understand the differences between natural and manufactured fibers 8. List the properties of fibers that are most useful for Forensic comparisons 9. Describe the proper collection of fiber evidence 10. Recognize the major contributors to the development of Forensic Science. | * Bell-Ringer * Journal Activities * Exit-Slips * Exams * Quizzes * Small Group (Team Activities) * Experiments * Projects * Presentations * Case Studies |

Instructional Resources/Materials

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| * Forensic Science: An Introduction, Second Edition * Forensic Science: From the Crime Scene to the Crime Lab, Third Edition * Criminalistics: An Introduction to Forensic Science, Eleventh Edition * Criminalistics; An Introduction to Forensic Science, Lab Manual (8th Edition) * Crime Science; Methods of Forensic Detection | * Hidden Evidence, Second Edition * Introduction to Forensic Science, Basic Laboratory Exercises, 3rd Edition * Forensic Science, Laboratory Experiment and Manual * Crime Scene Investigations, Forensic Experiments * Forensic Science web-site (Wardisiani-fs.com) |

Highlight or bold at least one Reading and one Writing standard for each unit of study.

Other content areas can replace their content area title in the text.

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| Science and Technology Literacy Standards Grades 9-10 | Science and Technology Literacy Standards Grades 11-12 | Writing Standards |
| RST.9-10.1 Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. | RST.11-CCR.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. | WHST. 1 Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence. |
| RST.9-10.2 Determine the central ideas or conclusions of a text; trace the text’s explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. | RST.11-CCR.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. | WHST. 2 Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content. |
| 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. | RST.11-CCR.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. | WHST. 3 Write narratives to develop real or imagined experiences or events using effective techniques, well-chosen details and well-structured event sequences. |
| 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. | RST.11-CCR.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 texts and topics. | WHST. 4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. |
| RST.9-10.5 Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). | RST.11-CCR.5  Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. | WHST. 5 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. |
| RST.9-10.6 Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address. | RST.11-CCR.6  Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved. | WHST. 6 Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others. |
| 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. | RST.11-CCR.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. | WHST. 7 Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation. |
| RST.9-10.8 Assess the extent to which the reasoning and evidence in a text support the author’s claim or a recommendation for solving a scientific or technical problem. | RST.11-CCR.8  Evaluate the hypotheses, 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. | WHST. 8 Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism. |
| RST.9-10.9 Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts. | RST.11-CCR.9  Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. | WHST. 9 Draw evidence from literary or informational texts to support analysis, reflection, and research. |
| RST.9-10.10 By the end of grade 10, read and comprehend science/technical texts in the grades 9–10 text complexity band independently and proficiently. | RST.11-CCR.10  By the end of grade 12, read and comprehend science/technical texts in the grades 11–12 text complexity band independently and proficiently. | WHST.10 11-CCR Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. |