

Forensics

	Course Outline	
<i>Unit One</i>	<i>Introduction to Forensics</i>	<i>8 days</i>
<i>Unit Two</i>	<i>Types of Evidence</i>	<i>10 days</i>
<i>Unit Three</i>	<i>Fingerprints and Other Prints</i>	<i>10 days</i>
<i>Unit Four</i>	<i>Hair and Fibers</i>	<i>12 days</i>
<i>Unit Five</i>	<i>Blood</i>	<i>8 days</i>
<i>Unit Six</i>	<i>DNA Analysis</i>	<i>5 days</i>
<i>Unit Seven</i>	<i>Human Remains</i>	<i>10 days</i>
<i>Unit Eight</i>	<i>Soil Analysis</i>	<i>5 days</i>
<i>Unit Nine</i>	<i>Glass</i>	<i>5 days</i>
<i>Unit Ten</i>	<i>Document and Handwriting Analysis</i>	<i>8 days</i>
<i>Unit Eleven</i>	<i>Firearms and Ballistics</i>	<i>10 days</i>

School-wide Academic Expectations Addressed in Forensics:

- Problem Solving
- Collaboration

School-wide Social and Civic Expectations Addressed in Forensics:

- Honesty
- Responsibility
- Respect
- Safety

Common Core Standards Addressed in Forensics:

- *Reading Standard for Science Literacy (RST): 2, 3, 4, 7, 8, 9*
- *Writing Standards for Science Literacy (WHST): 1, 2, 4, 9*

NGSS Standards Addressed in Forensics:

- *TBD*

Unit 1: Introduction to Forensics

Introduction: Forensic science is the study and application of science to matters of law. It is multidisciplinary and a natural medium for student to practice science as inquiry.

CT State Standard(s):

Enrichment Content Standards: Motion & Forces and Conservation of Energy & Momentum

Common Core Standard(s):

- Reading Standard for Science Literacy (RST): 2, 3, 4, 7, 8, 9
- Writing Standards for Science Literacy (WHST): 1, 2, 4, 9

Essential Question(s):

What is the function of a crime lab?

What evidence can be presented in court?

Key Terms/Concepts: Criminalistics, Evidence, Probative Value, Frye Standard, Daubert Ruling

Standard	LEARNING OBJECTIVES (Content and Skill)	INSTRUCTIONAL STRATEGIES	ASSESSMENT EVIDENCE
	1. Describe how a crime lab works, including different jobs done by forensic scientists	<ul style="list-style-type: none">• Power Point & Class Discussion	Oral Discussion
	2. Outline the growth and development of forensic science through history	<ul style="list-style-type: none">• Power Point & Class Discussion	
	3. Define federal rules of evidence, including Frye standard and Daubert ruling	<ul style="list-style-type: none">• Power Point & Class Discussion	Oral Discussion
	4. Describe the Locard principle	<ul style="list-style-type: none">• Power Point & Class Discussion	Oral Discussion

Suggested Resources: Forensic Science for High School – Barbara Deslich & John Funkhouser (2006)

Suggested Technology: DVD player, Computer, Projector

Unit 2: Types of Evidence

Introduction: Evidence comes in all shapes and sizes. It is something that tends to establish or disprove a fact. Evidence can include documents, testimony, and other objects. This unit focuses on identifying types of evidence, determining probative value and how to collect evidence properly.

CT State Standard(s):

none

Common Core Standard(s):

- Reading Standard for Science Literacy (RST): 2, 3, 4, 7, 8, 9
- Writing Standards for Science Literacy (WHST): 1, 2, 4, 9

Essential Question(s):

What qualifies as evidence?

What are the different classifications of evidence?

How is evidence collected?

Key Terms/Concepts: Testimonial Evidence, Physical Evidence, Class v Individual Evidence, Chain of Custody, Methods of Collecting Evidence

Standard	LEARNING OBJECTIVES (Content and Skill)	INSTRUCTIONAL STRATEGIES	ASSESSMENT EVIDENCE
	1. Explain the difference between indirect and direct evidence & describe the value of such evidence in a court of law.	<ul style="list-style-type: none"> • Power Point & Class Discussion 	Oral Discussion
	2. Describe what is meant by physical evidence and give examples.	<ul style="list-style-type: none"> • Power Point & Class Discussion 	Oral Discussion
	3. Distinguish between individual and class evidence.	<ul style="list-style-type: none"> • Activity – Can This Evidence be Individualized? 	Performance Task
	4. Determine the significance of class evidence.	<ul style="list-style-type: none"> • Power Point & Class Discussion 	Oral Discussion
	5. Observe methods of collecting evidence.	<ul style="list-style-type: none"> • Power point 	Oral Discussion
	6. Identify and apply proper procedures for collecting and recording evidence	<ul style="list-style-type: none"> • Evidence collection activity – Crime Scene 	Performance Task
	7. Prepare a sketch of crime scene	<ul style="list-style-type: none"> • Activity – create sketch of crime scene using measurements & notes taken during evidence collection 	Embedded Task
	8. Analyze three crime scene scenarios for errors in procedure	<ul style="list-style-type: none"> • Group Activity & Class Discussion 	Oral Discussion Summative Assessment/Test

Suggested Resources: Forensic Science for High School – Barbara Deslich & John Funkhouser (2006)

Suggested Technology: DVD player, Computer, Projector

Unit 3: Fingerprints and Other Prints

Introduction: Fingerprints identification is now standard practice in law enforcement. All fingerprints can be classified into three basic patterns, whorls, loops and arches. In addition to fingerprints, this unit addresses other prints such as teeth marks and tool marks.

CT State Standard(s):

Enrichment Content Standards: Genetics, Evolution, Organic Chemistry & Biochemistry, and Motion & Force,

Common Core Standard(s):

- Reading Standard for Science Literacy (RST): 2, 3, 4, 7, 8, 9
- Writing Standards for Science Literacy (WHST): 1, 2, 4, 9

Essential Question(s):

What are the three basic types of fingerprints?

How are fingerprints individualized?

What other types of prints can be used as evidence?

What methods can be used to enhance prints?

Key Terms/Concepts: Types of Fingerprints, Ridge Classification, Plastic, Visible, and Latent Prints, AFIS

Standard	LEARNING OBJECTIVES (Content and Skill)	INSTRUCTIONAL STRATEGIES	ASSESSMENT EVIDENCE
Genetics, Evolution	<ol style="list-style-type: none"> 1. Describe three basic types of fingerprints. 2. Explain why fingerprints are individual evidence. 3. Compare and contrast latent, plastic, and visible prints. 4. Explain how technology has made fingerprint identification easier. 	<ul style="list-style-type: none"> • Power Point, Notes & Discussion • Video - <u>Dead Reckoning</u> <u>Fingerprinting a Killer</u> (History Channel) 	Oral Discussion
Evolution	<ol style="list-style-type: none"> 5. Produce a readable, inked set of fingerprints. 6. Identify general ridge patterns and apply Henry-FBI classification. 7. Identify friction ridge characteristics and compare fingerprints with at least 10 points of comparison. 	<ul style="list-style-type: none"> • Lab – Flinn Fingerprinting Kit 	Performance Task and Constructed Response
Organic Chemistry and Biochemistry	<ol style="list-style-type: none"> 8. Perform dusting and lifting of prints. 9. Use chemical methods to develop prints. 	<ul style="list-style-type: none"> • Lab – Dusting Method & Chemical Methods 	Embedded Assessment
Motion and Force	<ol style="list-style-type: none"> 10. Prepare and preserve prints of lips and ears. 11. Prepare mold and model of teeth marks. 12. Compare and contrast shoe prints. 13. Analyze shoe prints to solve crime scenario 	<ul style="list-style-type: none"> • Lab – Clay & Plaster Models • Activity – Analysis of Foot Prints 	Embedded Task

Motion and Forces	14. Prepare & preserve prints of tools. 15. Analyze tool marks to solve crime scenario. 16. Communicate and defend a scientific argument.	<ul style="list-style-type: none"> • Lab – Tool Marks Lab 	Embedded Task Summative Assessment/Test
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Suggested Resources: Forensic Science for High School – Barbara Deslich & John Funkhouser (2006)

Suggested Technology: DVD player, Computer, Projector, Dissecting Scopes

Unit 4: Hair & Fibers

Introduction: Hair and fibers are two types of evidence found at most crime scenes. By themselves, hair or fibers usually cannot link an individual to a crime, but as circumstantial evidence, they are vital in solving a crime.

CT State Standard(s):

Enrichment Content Standards: Genetics, Evolution, Physiology, Standard 9.4, Standard 9.5, Standard 9.6, and Heat & Thermodynamics

Common Core Standard(s):

- Reading Standard for Science Literacy (RST): 2, 3, 4, 7, 8, 9
- Writing Standards for Science Literacy (WHST): 1, 2, 4, 9

Standard	LEARNING OBJECTIVES (Content and Skill)	INSTRUCTIONAL STRATEGIES	ASSESSMENT EVIDENCE
Genetics, Evolution, Physiology	<ol style="list-style-type: none"> 1. Describe structure of hair. 2. Compare & contrast human & animal hair. 3. Identify characteristics of hair that are important for forensics analysis. 	<ul style="list-style-type: none"> • Power Point, Notes & Discussion 	Oral Discussion
Evolution, Genetics	<ol style="list-style-type: none"> 4. Prepare mold of hair cuticles. 5. Create slides of various human hairs. 6. Observe prepared slides and record observations for reference. 	<ul style="list-style-type: none"> • Lab - Cuticle Molding • Lab – Prepare Slides • Lab – Human Hair 	Embedded Assessment
Physiology	<ol style="list-style-type: none"> 7. Compare & contrast various animal hairs. 8. Observe prepared slides and record observations. 	<ul style="list-style-type: none"> • Lab – Animal vs Human Hair 	Performance Task
Physiology	<ol style="list-style-type: none"> 9. Observe hair in different phases. 10. Observe hair with root. 11. Observe & identify cut hair. 	<ul style="list-style-type: none"> • Lab – Various Human Hair 	Performance Task
9.6	<ol style="list-style-type: none"> 12. Distinguish & identify different types of fibers visually. 13. Describe polymerization. 14. Identify fiber types using visual and chemical analysis. 	<ul style="list-style-type: none"> • Power Point, Notes & Discussion 	Oral Response
9.6	<ol style="list-style-type: none"> 15. Prepare slides, observe, & identify different types of fibers visually. 	<ul style="list-style-type: none"> • Lab – Fiber Type Comparison 	Performance Task
9.5, Heat and Thermodynamics	<ol style="list-style-type: none"> 16. Distinguish & identify different types of fibers based on burn test. 17. Identify known samples based on odor, appearance, or residue. 18. Identify unknown sample based on burn test. 	<ul style="list-style-type: none"> • Lab – Burn Test & Thermo-decomposition 	Performance Task
9.4	<ol style="list-style-type: none"> 19. Distinguish & identify different types of fibers based on various chemical tests. 20. Identify known samples based on reaction to various chemicals. 21. Identify unknown sample based on chemical analysis. 	<ul style="list-style-type: none"> • Lab – Chemical Test of Fibers 	Performance Task

	22. Apply knowledge and skills of fibers & hair to solve a crime scenario. 23. Communicate and defend a scientific argument.	<ul style="list-style-type: none"> • Activity – Simulated Crime Scene 	Performance Task and Constructed Response
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Essential Question(s):

**What are the characteristics of hair that make it useful for forensics analysis?
 How is human hair different from animal hair/fur?**

Key Terms/Concepts: Locard Exchange Principle, Cuticle, Cortex, Medulla, Questioned v Exemplar, Fiber, Warp, Weft, Blend, Polymer

Suggested Resources: Forensic Science for High School – Barbara Deslich & John Funkhouser (2006)

Suggested Technology: DVD player, Computer, Projector, Dissecting Scopes, Microscopes

Unit 5: Blood

Introduction: The shape and location of bloodstains provide clues about where the victim/suspect was and when the crime took place. Blood also reveals the presence of disease, drugs, or alcohol, and is can be used to determine the identity of the victim/suspect through DNA analysis. (*Forensics for Dummies*).

CT State Standard(s):

Enrichment Content Standards: Genetics, Evolution, and Motion and Forces.

Common Core Standard(s):

- Reading Standard for Science Literacy (RST): 2, 3, 4, 7, 8, 9
- Writing Standards for Science Literacy (WHST): 1, 2, 4, 9

Essential Question(s):

Is it blood? Is it animal or human blood?

If human, what is the blood type?

How can blood evidence be used in solving a crime?

Key Terms/Concepts: Presumptive Test, Chemiluminescence, Precipitin Test, Antibodies, Antigens, Agglutination, Serology, Arterial Spurting, Swipe, Wipe

Standard	LEARNING OBJECTIVES (Content and Skill)	INSTRUCTIONAL STRATEGIES	ASSESSMENT EVIDENCE
Genetics, Evolution	<ol style="list-style-type: none">1. Determine whether a stain is blood. Determine whether a bloodstain is human or animal.2. Determine blood type.	<ul style="list-style-type: none">• Lab – Blood Typing• Lab – Is the Sample Blood?• Video – <i>Dead Reckoning Blood Spatter</i> (History Channel)	Performance Task and Constructed Response
Motion and Forces	<ol style="list-style-type: none">3. Explore bloodstain patterns as a function of velocity, direction, and height of fall.	<ul style="list-style-type: none">• Practice Problems• Lab – Angle of Impact, Height & Velocity	Embedded Assessment
Motion and Forces	<ol style="list-style-type: none">4. Use technology and mathematics to improve investigations and communication.5. Communicate and defend a scientific argument.	<ul style="list-style-type: none">• Lecture, Notes & Discussion• Practice Problems – determining height of wound using• Lab – Left-handed v Right-handed	Oral Assessment Performance Task Oral Assessment Summative Assessment

Suggested Resources: Forensic Science for High School – Barbara Deslich & John Funkhouser (2006)

Suggested Technology: DVD player, Computer, Projector

Unit 6: DNA Analysis

Introduction: DNA “fingerprinting” is a common way to identify people by their unique genetic codes. It is currently used to identify the perpetrator in a crime, to identify fathers in paternity cases, and to identify unknown remains in mass disasters and other situations (*Forensic Science for High Schools*).

CT State Standard(s):

Enrichment Content Standards: Genetics, Evolution, Electric & Magnetic Phenomena, and Organic and Biochemistry,

Common Core Standard(s):

- Reading Standard for Science Literacy (RST): 2, 3, 4, 7, 8, 9
- Writing Standards for Science Literacy (WHST): 1, 2, 4, 9

Essential Question(s):

What is the structure of DNA?

What techniques are used to test DNA?

How is DNA used to solve crimes?

Key Terms/Concepts: Chromosome, DNA, Gene, Electrophoresis, Restriction Enzyme, Probe, Polymerase Chain Reaction, CODIS, Human Genome Project

Standard	LEARNING OBJECTIVES (Content and Skill)	INSTRUCTIONAL STRATEGIES	ASSESSMENT EVIDENCE
Genetics, Evolution, Electric and Magnetic Phenomena	<ol style="list-style-type: none"> 1. Describe the structure and function of DNA. 2. Explain how DNA is used in crime scene analysis. 3. Outline the procedures of RFLP, PCR, and STRs to analyze DNA. 	<ul style="list-style-type: none"> • Power Point , Notes & Discussion • Activity – Electrophoresis Simulation <ul style="list-style-type: none"> ○ http://learn.genetics.utah.edu/content/labs/gel/ • http://www.pbs.org/wgbh/nova/education/body/create-dna-fingerprint.html 	<p>Oral Response Performance Task</p>
Genetics, Organic Chemistry and Biochemistry	<ol style="list-style-type: none"> 4. Isolate and extract DNA from cells. 	<ul style="list-style-type: none"> • Lab – Isolation of Pea DNA • Lab – Isolation of Cheek DNA 	<p>Performance Task</p>
Genetics	<ol style="list-style-type: none"> 5. Analyze STRs and determine familial 6. lines. 7. Communicate and defend a scientific argument. 	<ul style="list-style-type: none"> • Practice Problems • Analysis of STR from crime scene 	<p>Embedded Task</p>
	<ol style="list-style-type: none"> 8. Investigate the various applications of DNA analysis to situations other than criminal. 	<ul style="list-style-type: none"> • Computer Research <ul style="list-style-type: none"> ○ http://www.nlm.nih.gov/visibleproofs/education/dna/index.html 	<p>Embedded Task Summative Assessment</p>

Suggested Resources: *Forensic Science for High School* – Barbara Deslich & John Funkhouser (2006)

Suggested Technology: DVD player, Computer, Projector, Electrophoresis Equipment

Unit 7: Human Remains

Introduction: Anthropologists can use bones to determine whether remains are human; to determine the gender, age and sometimes the race of a victim. Analysis of the skeleton can estimate height and may be used to determine when and how death occurred.

CT State Standard(s):

Enrichment Content Standards: Genetics, Evolution, and Physiology

Common Core Standard(s):

- Reading Standard for Science Literacy (RST): 2, 3, 4, 7, 8, 9
- Writing Standards for Science Literacy (WHST): 1, 2, 4, 9

Essential Question(s):

What are the bones in the human body?

How can bones be used to determine sex, age, and sometimes race?

How is anthropology used to solve crimes and identify remains from other situations?

Key Terms/Concepts: Osteology, Sex Determination, Differences in Skull Features, Determining Age, Facial Reconstruction, Cause of Death & Bone Anomalies.

Standard	LEARNING OBJECTIVES (Content and Skill)	INSTRUCTIONAL STRATEGIES	ASSESSMENT EVIDENCE
Genetics, Evolution	<ol style="list-style-type: none"> 1. Determine how anthropologists can use bones to determine sex, age, sometimes race. 2. To estimate height and to determine when death may have occurred. 	<ul style="list-style-type: none"> • Power Point , Notes & Discussion 	Oral Response
Physiology	<ol style="list-style-type: none"> 3. Identify bones in the human body. 	<ul style="list-style-type: none"> • On-line interactive • http://www.bbc.co.uk/science/humanbody/body/index_interactivebody.shtml • Label bones on a skeleton 	Embedded Task Performance Task Quiz
Physiology	<ol style="list-style-type: none"> 4. Identify sex, age, & race of assorted bones. 	<ul style="list-style-type: none"> • Lab – Human Remains (Sherlock Bones – WARD Scientific) 	Performance Task and Constructed Response
Physiology	<ol style="list-style-type: none"> 5. Explore process of facial reconstruction. 	<ul style="list-style-type: none"> • Article • http://anthropology.si.edu/writteninbone/comic/activity/pdf/Facial_reconstructions.pdf • On-line interactive http://www.pbs.org/wnet/secrets/previous_seasons/case_amazon/pop_facial/index.html 	Embedded Task

Suggested Resources: Forensic Science for High School – Barbara Deslich & John Funkhouser (2006)

Suggested Technology: DVD player, Computer, Projector

Unit 8: Soil Analysis

Introduction: Soil is not simply dirt; it is a complex mixture of minerals, plants, and animal matter. It may contain fabricated products such as glass, paint, concrete and other materials. The content of soils vary greatly from one region or locale to another. (*Forensics for Dummies*), thus providing useful evidence in solving a crime.

CT State Standard(s):

Enrichment Content Standards: Dynamic Earth Processes and standard 9.4

Common Core Standard(s):

- Reading Standard for Science Literacy (RST): 2, 3, 4, 7, 8, 9
- Writing Standards for Science Literacy (WHST): 1, 2, 4, 9

Essential Question(s):

How do soils differ?

How can soils be used as evidence?

Key Terms/Concepts: Soil Types, Topography, Forensic Geology

Standard	LEARNING OBJECTIVES (Content and Skill)	INSTRUCTIONAL STRATEGIES	ASSESSMENT EVIDENCE
Dynamic Earth Processes	1. Describe why soils are class evidence and when soils can be used as circumstantial evidence.	<ul style="list-style-type: none">• Power Point , Notes & Discussion	Oral Response
Dynamic Earth Processes	2. Identify soil's common constituents and relate soil types to the environment.	<ul style="list-style-type: none">• Lab – microscopic analysis of various soil types	Performance Task
9.4	3. Carryout tests of general appearance, color, acidity particle size, density and rate of settling. 4. Communicate and defend a scientific argument.	<ul style="list-style-type: none">• Lab – A Hit-and Run Accident<ul style="list-style-type: none">○ Application of techniques to solve crime	Performance Task
	5. Interpret a topographical map. 6. Communicate and defend scientific argument.	<ul style="list-style-type: none">• Lab – Where is Alice Springs?	Performance Task and Constructed Response

Suggested Resources: Forensic Science for High School – Barbara Deslich & John Funkhouser (2006)

Suggested Technology: DVD player, Computer, Projector, Dissecting Scopes, Microscopes

Unit 9: Glass

Introduction: This unit investigates how glass can be used as evidence. Glass is a very common material in our environment and may be used by investigators to place a suspect at a scene, prove a witness statement, or re-create a sequence of events.

CT State Standard(s): Waves

Common Core Standard(s):

- Reading Standard for Science Literacy (RST): 2, 3, 4, 7, 8, 9
- Writing Standards for Science Literacy (WHST): 1, 2, 4, 9

Essential Question(s):

How do glass samples differ?

How can glass be used as evidence?

Key Terms/Concepts: Reflection, Refraction, Refractive Index, Conchoidal Fracture,

Standard	LEARNING OBJECTIVES (Content and Skill)	INSTRUCTIONAL STRATEGIES	ASSESSMENT EVIDENCE
	1. Describe the nature of glass and how glass can be used as evidence.	<ul style="list-style-type: none">• Power Point , Notes & Discussion	Oral Response
Waves	2. Observe various sample of class describe all physical properties and predict origin or use.	<ul style="list-style-type: none">• Activity – Observations of Different Types of Glass• Lab – Characterization of Glass• Lab – Determining Refractive Index	Performance Task
	3. Analyze glass fracture patterns.	<ul style="list-style-type: none">• Demonstration• Crime Scene Analysis Activity	Summative Assessment

Suggested Resources: Forensic Science for High School – Barbara Deslich & John Funkhouser (2006)

Suggested Technology: DVD player, Computer, Projector

Unit 10: Document and Handwriting Analysis

Introduction: The examination of questioned documents cover many areas of investigation, including verifying handwriting, and signatures; authenticating documents; characterizing papers, pigments and inks used in writing. This area has been expanded to include computer forensics.

CT State Standard(s):

Enrichment Content Standards: Reaction Rates

Common Core Standard(s):

- Reading Standard for Science Literacy (RST): 2, 3, 4, 7, 8, 9
- Writing Standards for Science Literacy (WHST): 1, 2, 4, 9

Essential Question(s):

How is handwriting analysis used as evidence?

What other types of evidence can be analyzes under the category of document analysis?

Key Terms/Concepts: Forgery, Diacritics, Obliteration, Indentation, Chromatography, Counterfeiting

Standard	LEARNING OBJECTIVES (Content and Skill)	INSTRUCTIONAL STRATEGIES	ASSESSMENT EVIDENCE
	1. Explain how handwriting can be individualized. 2. Determine what types of evidence can be submitted for document analysis	<ul style="list-style-type: none">• Lecture, Notes & Discussion	Oral Response
	3. Characterize handwriting using 12 points of analysis.	<ul style="list-style-type: none">• Class Activity – Matching Handwriting	Performance Task
Reaction Rates	4. Design & conduct and experiment using paper chromatography to determine which pen altered a note.	<ul style="list-style-type: none">• Lab – Ink Comparison Using Paper Chromatography	Performance Task and Constructed Response

Suggested Resources: Forensic Science for High School – Barbara Deslich & John Funkhouser (2006)

Suggested Technology: DVD player, Computer, Projector

Unit 11: Firearms and Ballistics

Introduction: Unfortunately, it is a fact that guns commonly are used in criminal activities. Forensic firearms examiners are specifically trained to analyze weapons, bullets, and ballistic (*Forensics for Dummies*). This unit offers an overview of these three topics.

CT State Standard(s):

Enrichment Content Standards: Motion & Forces, Conservation of Energy & Momentum, and Chemical Bonds

Common Core Standard(s):

- Reading Standard for Science Literacy (RST): 2, 3, 4, 7, 8, 9

Standard	LEARNING OBJECTIVES (Content and Skill)	INSTRUCTIONAL STRATEGIES	ASSESSMENT EVIDENCE
Conservation of Energy and Momentum	1. Determine how forensics scientists use ballistics and gun analysis to solve crimes.	<ul style="list-style-type: none">• Power Point, Notes & Discussion	Oral Discussion
	2. Identify & match bullets using comparison microscope.	<ul style="list-style-type: none">• On-line simulation: www.firearmsid.com	Summative Assessment
	3. Identify & match cartridges.	<ul style="list-style-type: none">• On-line simulation: www.firearmsid.com	Performance Task
Motion and Forces	4. Determine distance and direction of shot.	<ul style="list-style-type: none">• Activity – Gunshot	Investigative Project
Chemical Bonds	5. Determine how to test for gunshot residue.	<ul style="list-style-type: none">• Lab – Gunshot Residue	Performance Task Summative Assessment

- Writing Standards for Science Literacy (WHST): 1, 2, 4, 9

Essential Question(s):

How is a bullet matched to a crime?

How is a bullet matched to a specific gun?

How are crimes involving guns investigated?

Key Terms/Concepts: Bullet, Cartridge, Land & Grooves, Rifling, Reconstruction

Suggested Resources: Forensic Science for High School – Barbara Deslich & John Funkhouser (2006)

Suggested Technology: DVD player, Computer, Projector

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