

Unit 2: Crime Scene Investigation



THE CRIME SCENE



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CRIME SCENE DO NOT CROSS



“Crime labs do not solve crimes; only a **thorough** and **competent** investigation conducted by professional police officers will enhance the chances for a successful investigation.”

Saferstein – Forensic Science Textbook



Central Focus

- Students can **differentiate class** and **individual evidence** and **explain** the proper techniques used to find, collect, and preserve this evidence. Students can **organize** and **disseminate** information about the physical evidence.

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Standards

- **SFS1. Students will recognize and classify various types of evidence in relation to the definition and scope of Forensic Science.**
- c. Determine the proper techniques to search, isolate, collect, and record physical and trace evidence.
- d. Evaluate the relevance of possible evidence at the site of an investigation.
- e. Organize relevant information to accurately develop and submit both scene and analysis reports.



Learning Targets

- 1. Understand **procedures** at crime scenes
- 2. Explain the difference between **indirect** and **direct** evidence.
- 3. Describe what is meant by **physical evidence** and give examples.
- 4. Differentiate between **individual** evidence from **class** evidence.
- 5. Determine the **significance** of class evidence.



Essential Questions – Day 1

- What are the overall steps in a Forensic Investigation?
- What is the difference between a standard sample, a reference sample, and a substrate control?

Forensic Investigations

Include some or all of seven major activities

➤ **Recognition**

➤ **Preservation**

At the crime scene

➤ **Identification**

➤ **Comparison**

➤ **Individualization**

Evidence Analysis:
Scientific Testing

➤ **Interpretation**

Recreating what
happened

➤ **Reconstruction**

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Forensic Investigations

Include some or all of seven major activities

- **Recognition**- ability to distinguish **important** evidence from **unrelated** material
 - Pattern recognition
 - Physical property observation
 - Information analysis
 - Field testing
- **Preservation**- **collection** and proper **storage** of evidence

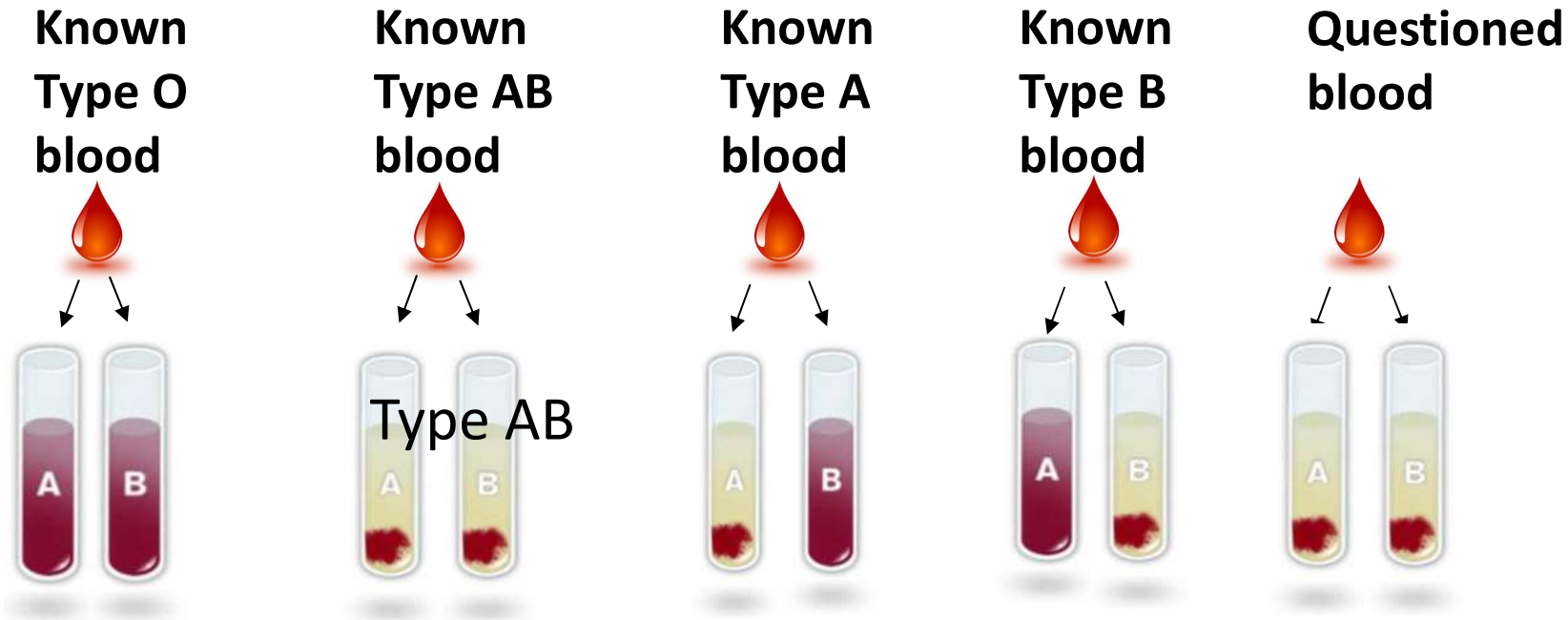
- **Identification**- use of **scientific testing** to determine information about a substance
- Physical properties
 - Chemical properties
 - Morphological properties
 - Biological properties
- 1) Need a testing procedure that gives **typical results** for specific **standard** materials
 - Ex. Want to determine a blood type? I need to have known A, B, AB, and O blood types to compare against.
 - 2) Number/type of tests must be sufficient to **exclude** other substances



➤ **Comparison**- characteristics of the physical evidence are measured against those of **known standards** or **controls**

- combinations of specific properties are selected to compare
 - suspect specimen and a **known** standard (i.e. **reference**) specimen subjected to same analysis
- Draw conclusion about origin
 - if **all** measurements are equal, then the two samples **may** be considered to have come from a **common** source

Standard Samples



These are the **expected** results; you would want to use these known samples EVERY time you determine an unknown blood type because:

- 1) It tells you what a positive test looks like to allow for identification.
- 2) It lets you know if your scientific test is working.
(positive control)

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Control Samples for identification and comparison:

Substrate control – uncontaminated surface material close to area of physical evidence

– used to ensure the surface where the sample was found **does not interfere** with lab tests

- Example: piece of wall paper where blood spatter was found

Substrate Control

- Example: piece of wall paper where blood spatter was found

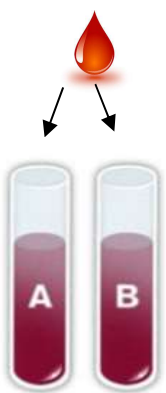


How do you know the scientific test is accurate?

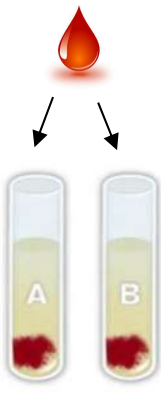
#1 = sample of blood from the wall paper

#2 = sample of wall paper near blood, but **WITHOUT** blood

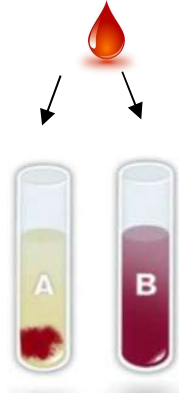
Known
Type O
blood



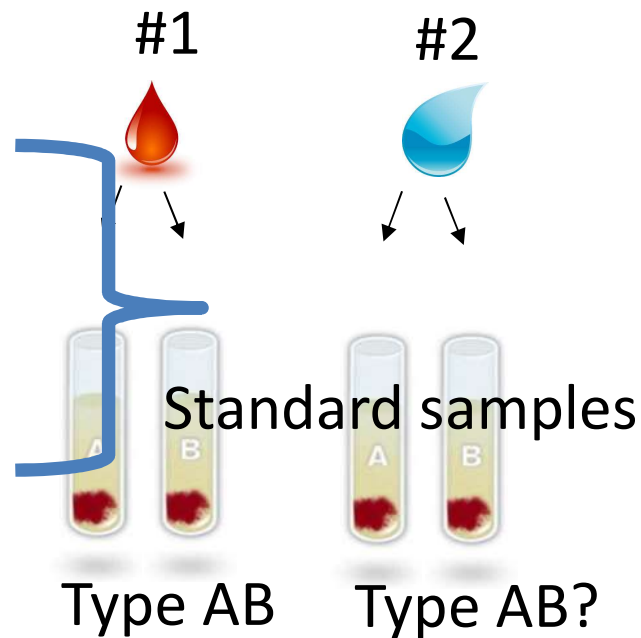
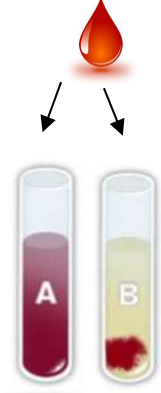
Known
Type AB
blood



Known
Type A
blood



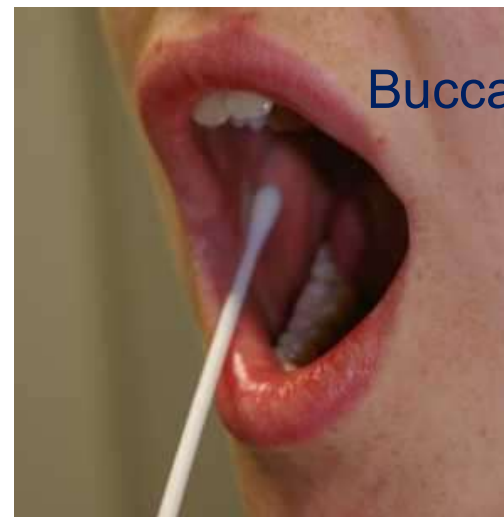
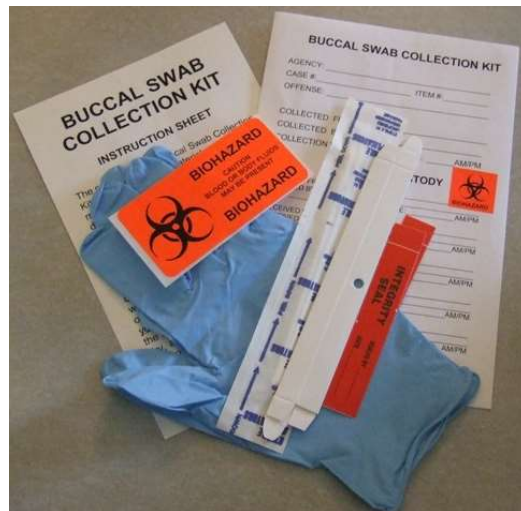
Known
Type B
blood



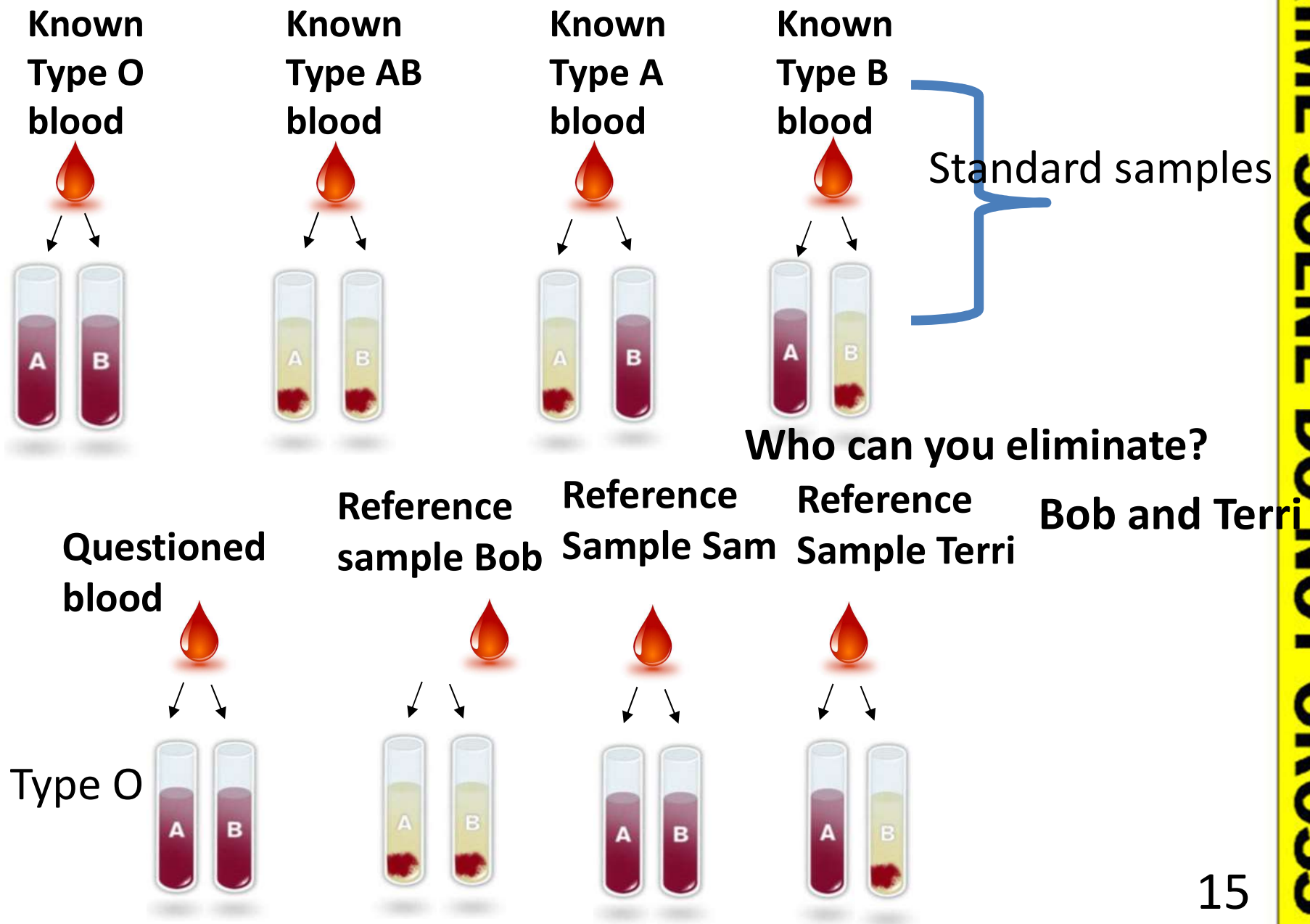
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Control Samples:

- **Reference Sample**- Physical evidence whose origin is **known**,
 - Ex. blood or hair from a suspect, that can be **compared** to crime-scene evidence.
- **Control** samples should also be taken from the victim for purposes of **exclusion** (blood, hair, etc.)



Reference Samples - example



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- **Individualization**- demonstrating that the sample is **unique**, even among members of the same class

- **Interpretation**- gives **meaning** to all the information

- **Reconstruction**- **recreates** the events of the case
 - Inductive and deductive logic
 - Statistical data
 - Pattern analysis
 - Results of laboratory analysis

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Essential Questions – Day 2

- What are the 7 S's of crime scene investigation?
- How is evidence collected and preserved; why is proper collection of evidence crucial to forensic science?

<https://www.youtube.com/watch?v=awcnMrZiSmU>

Crime Scene Investigation Team

- **Police Officers:** usually first (possibly a DA for a search warrant)
- **Crime Scene Investigators:** document crime and collect physical evidence
- **Recorder**
- **Sketch artist**
- **Photographers**
- **Evidence collectors**
- **Medical Examiners:** coroners may be necessary to determine cause of death in a homicide case
- **Detectives:** look for leads, interview witnesses and talking to the CSI about evidence
- **Specialists:** entomologists, psychologists



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Legal Considerations

Any removal of evidence from a crime scene must be in accordance with the 4th Amendment.

“The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.”



A warrantless search can be conducted:

- under **emergency** circumstances (danger to life or limb)
- if there is **immediate** danger of the loss or destruction of evidence
- if there is **probable cause** — ex. the search of a person and their immediate property in combination with a lawful arrest
- with the **consent** of the involved parties



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Seven S's of Crime Scene Investigation

1. Secure the scene
2. Separate the witnesses
3. Scan the scene
4. See the scene
5. Sketch the scene
6. Search for evidence
7. Secure and collect evidence



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Securing and Recording a Crime Scene

- Forensic science begins at the crime scene
- Incorrect preservation of crime scene or recording of details may...
 - **Destroy** or **alter** evidence
 - Hinder the search of a perpetrator by **misleading** investigators about the facts

Securing the Scene

- First responding officer's job:
 - A**pproach
 - R**ender Aid (SAFETY first – secure victims)
 - I**dentify other victims, witness, possible suspect
 - S**ecure the crime scene
 - N**otify appropriate authorities



Separating the Witnesses

- Witnesses must not be allowed to talk to one another.
- prevents them from working together to create a story (**collusion**).

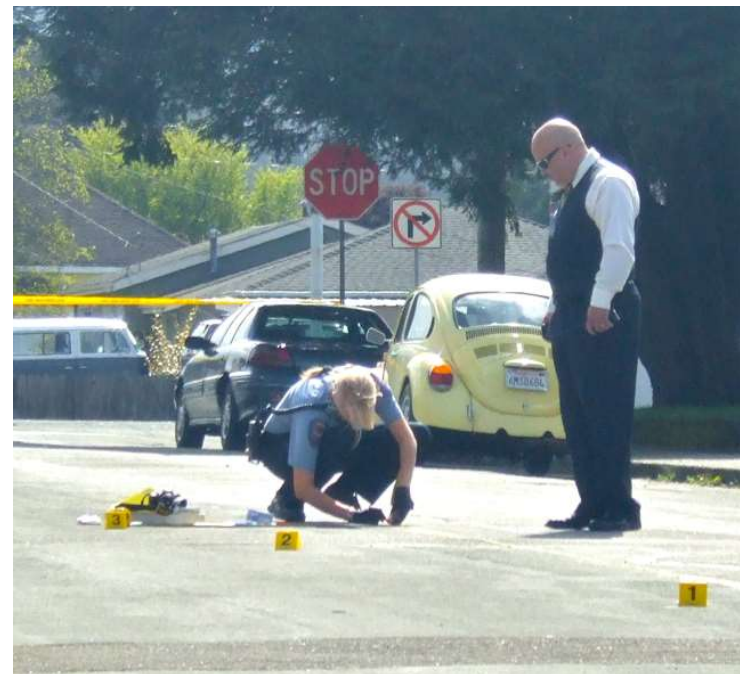


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Scan the Scene

- scan the scene to see where **photos** should be taken.
- Primary and secondary crime scenes must be determined.
 - Primary crime scene: where a crime actually **occurred**.
 - Secondary crime scene: related to the crime but **is not where** the actual crime took place.



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See the Scene

The **Photography Unit** takes photos:

- **overall area** - shows relationship of evidence to the crime
- **close-up** photos with and without a **ruler** - shows scale of the evidence.



See the Scene

- Photography
 - **Permanently** records the crime scene
 - No physical evidence is **moved** until photographed from **ALL** angles
 - Any objects that are moved **may be inadmissible** in court later
 - **CANNOT reintroduce** anything removed from the scene...crime scene **must** remain unaltered

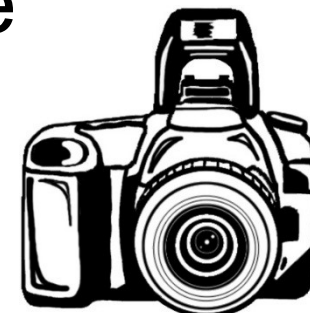


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See the Scene

- Triangulation of **stationary** objects is included in the photos as reference points
- View taken from different angles and distances
- Several close-up photos of evidence and bodies
- Required for presentation at trial
 - Establishes **condition** of crime scene
 - Location** of physical evidence



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Sketching the Scene

Accurate **rough** sketch is made noting position of body if applicable and any other evidence

1. **North** is labeled and a scale of distance is included
2. All important objects (weapon and body) are measured from two **immovable** landmarks; measurements must be **EXACT**
3. Any other objects in the vicinity of the crime should be included in the sketch
 - (ex. Doors, windows, furniture, trees, vehicles, etc.)

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Sketching the Scene

4. A **legend** of characters must be included
5. Also include: **Date, time, location, type** of crime, case number, and names (Sketched by and Verified by)
6. Final sketch drawn to scale is made **later.**

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Sketching the Scene

2741 Aragon St.
6/7/81
9:30 PM
bath (shooting)

Sketch by Officer
John Smith

A - Dining room table

B - Chair

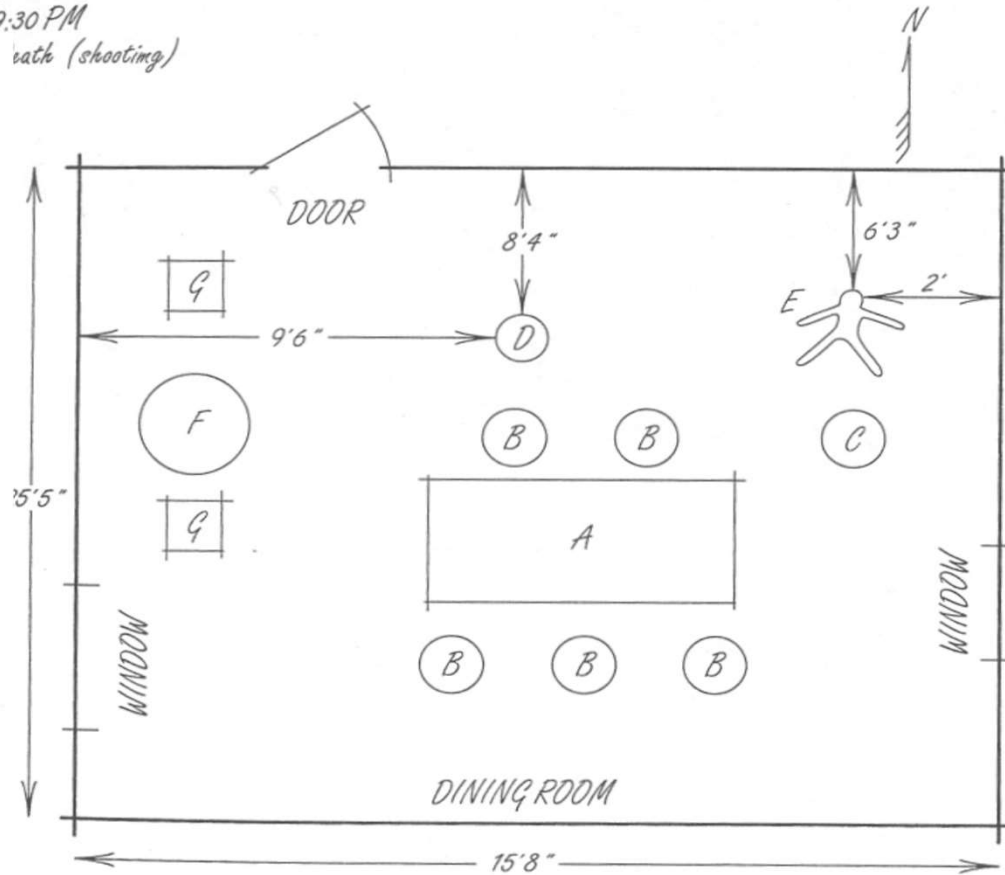
C - Overturned chair

D - 0.38 Revolver

E - Male body

F - Table

G - Chair



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Searching for Evidence

Pattern depends on **number** of investigators

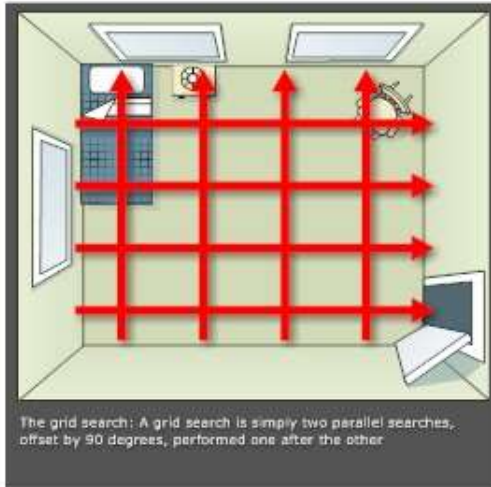
- **Walk** the scene marking location of evidence, photo, sketch
 - Single investigator: use grid, linear or spiral
 - Group: linear, zone or quadrant pattern
- **Systematic** patterns ensure no area is left **unsearched**
 - Additional light for hair / fibers
 - Vacuum cleaner
 - Flashlight and forceps reduce picking up unnecessary material

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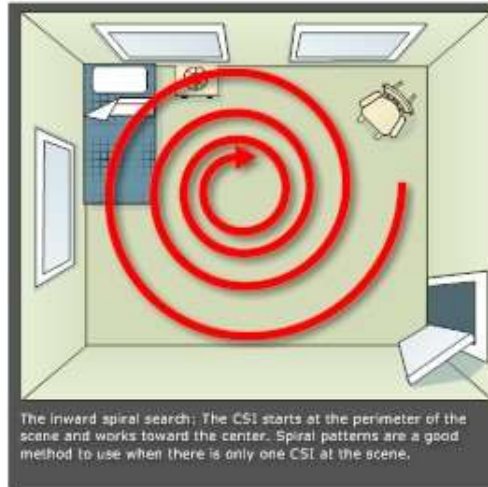
Search for Evidence

How CSI Works: Search Patterns

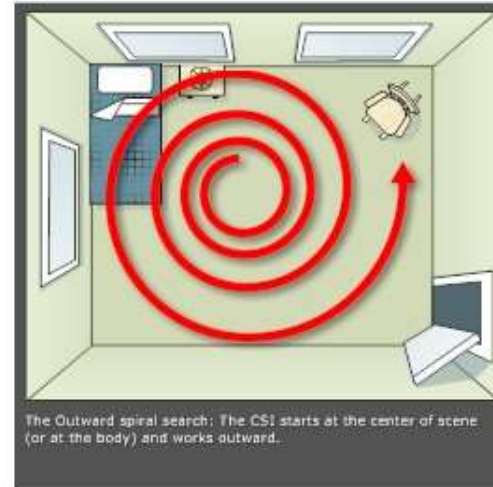
Search Pattern: Grid



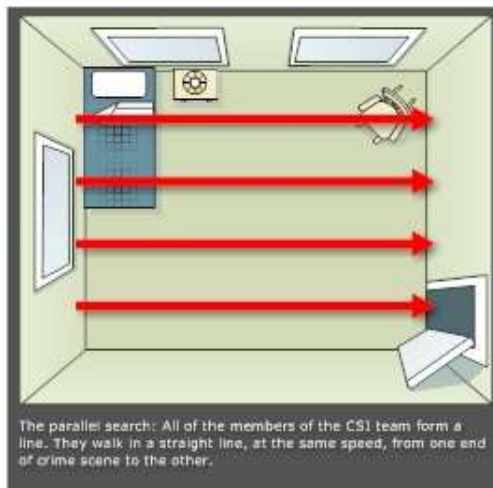
Search Pattern: Inward Spiral



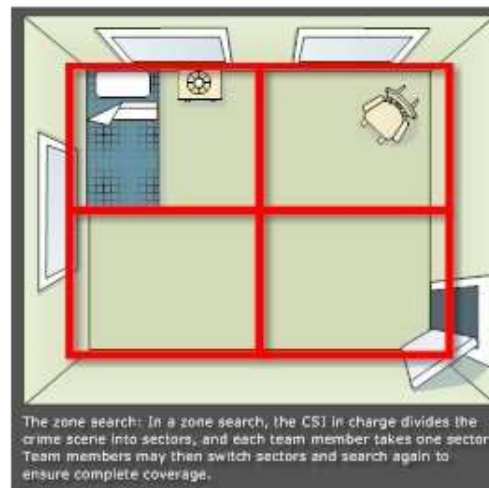
Search Pattern: Outward Spiral



Search Pattern: Parallel



Search Pattern: Zone



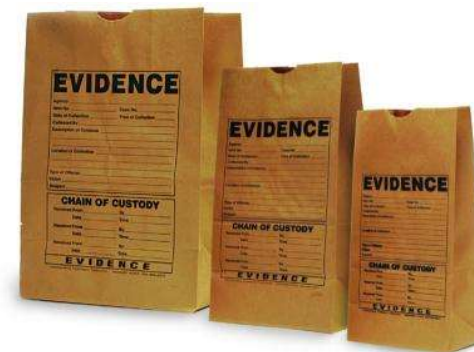
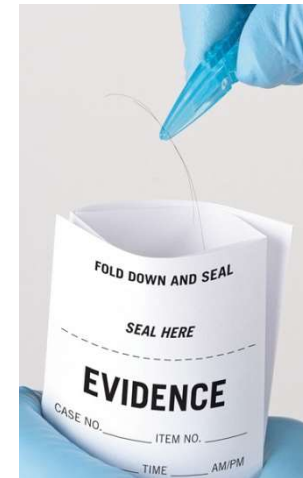
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Securing and Collecting the Evidence

All evidence must be:

- properly packaged
- sealed
- labeled

using **specific** techniques and procedures.



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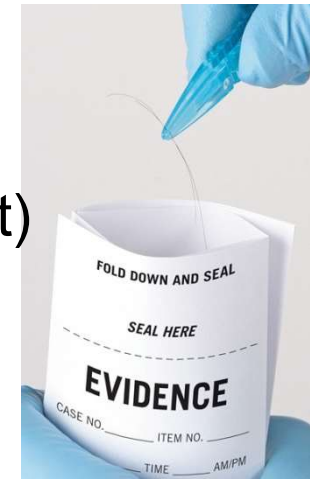
Collection from body to send to the forensic lab

- Victim's clothing
- Fingernail scrapings
- Head/pubic hairs
- Blood (DNA typing)
- Vaginal/anal/oral swabs (Sex-related crimes)
- Recovered bullets from body
- Hand swabs from shooting victims

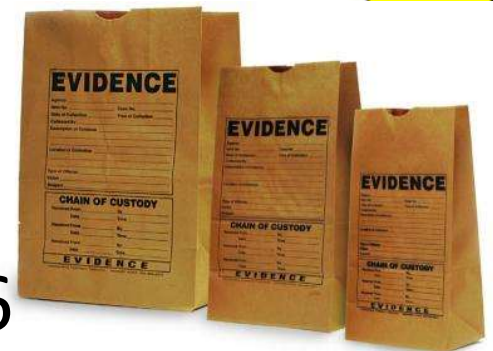
Securing and Collecting the Evidence

Packaging Evidence

- avoid contamination, breakage, evaporation, scratching, bending
 - Keep in **original** condition if possible
 - (ex. hairs on a shirt? Package the whole shirt)
 - Separate containers for:
 - Each **different** item
 - **Similar** items **collected at different** locations
 - Prevents contact damage and cross-contamination



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Securing and Collecting the Evidence

Packaging Evidence

- Metal or plastic **forceps**
 - used to pick up small items.
- Plastic **pill** bottles with lids
 - preferred containers for hairs, glass, fibers, **trace** evidence.
- **Airtight**, unbreakable containers
 - Liquids and arson remains - avoid evaporation

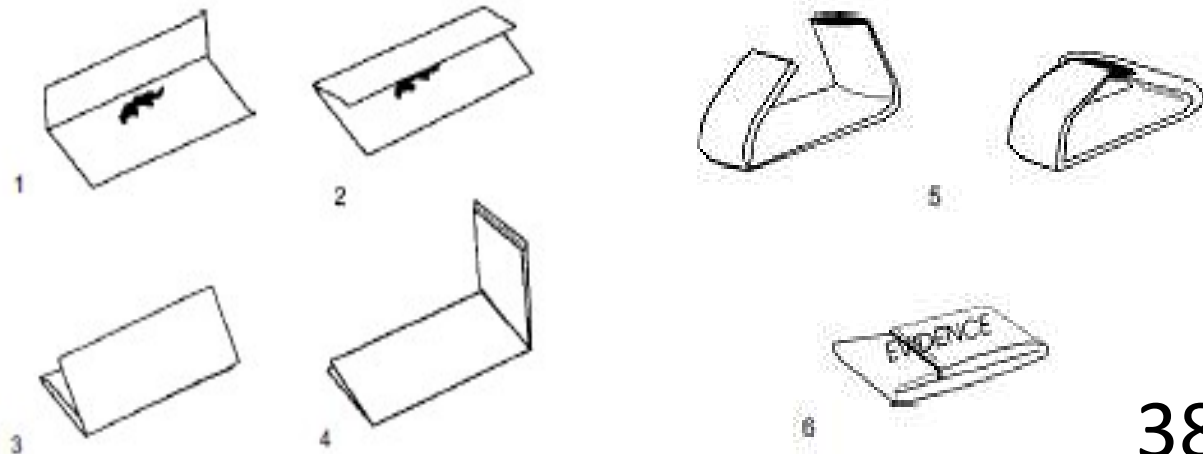
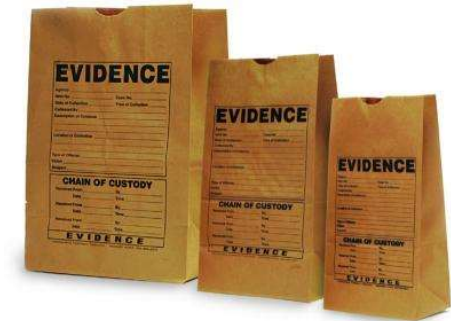


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Securing and Collecting the Evidence

Packaging Evidence

- **Biologicals** – breathable container to dry and avoid mold contamination
- Air-dried evidence is packaged into a paper **bundle** (or druggist's fold) then placed in a paper or plastic container.
 - Paper is taped and signed by collector.





Evidence log and **Chain of Custody** document is attached to the evidence container.

Contains:

- Case number
- Item inventory number
- Description of the evidence
- Name of the suspect
- Name of the victim
- Date and Time of recovery
- Signature of person recovering evidence
- Signature of any witnesses present during collection

Chain of Custody

- **Continuity of possession:** **EACH** person who comes in contact with a piece of evidence must document it.
- **Proper** handling of evidence from crime scene to courtroom ensures evidence can be **admissible** in court.

EVIDENCE	
Submitting Agency	_____
Date Collected	_____ Time _____
Item #	_____ Case # _____
Collected By	_____
Description of Evidence	_____

Location Where Collected	_____
Type of Offense	_____
CHAIN OF CUSTODY	
Rec. From	_____ By _____
Date	_____ Time _____
Rec. From	_____ By _____
Date	_____ Time _____
Rec. From	_____ By _____
Date	_____ Time _____

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Chain of Custody

Must be maintained to secure evidence

1. Collector **finds** evidence and bags it in paper or plastic
2. The final container is the collection bag labeled with pertinent info
3. **Seal** and collector's signature written across sealed edge
4. Taken to a lab and signed over to technician
5. Tech opens bag (tears) somewhere- not the sealed edge
6. Technician handles evidence then **repackages** evidence in **original** packaging and then seals in **new** packaging
7. Sign **chain of custody** log
8. Ensures responsible handling from crime scene to courtroom

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Analyze the Evidence

- A forensic lab processes all evidence CSI collected.
- Forensic lab technicians are specialized and process one type of evidence.
- Lab results sent to lead detective.
- Test results lead to crime scene reconstruction.
- Detective takes evidence and tries fit into scenario.
- Analysis can link a suspect to scene or victim or lead to acquittal .



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Using Physical Evidence

- If physical evidence is different than standard/reference samples from the suspect, a person may be exonerated or excluded from suspicion.

Crime Scene Reconstruction

- Crime scene reconstruction allows the detectives to form a hypothesis of the sequence of events from before the crime was committed through its commission.



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Staged Crime Scenes



Staging – Altering the crime scene to throw the investigation, this may happen with organized offenders.

Unique problem: evidence does not match testimony

Common situations:

- Arson: stage fire to cover robbery, murder
- Suicide/murder: death may be alcohol or overdose
- Burglary: staged to collect money



Things to consider when determining if staging occurred

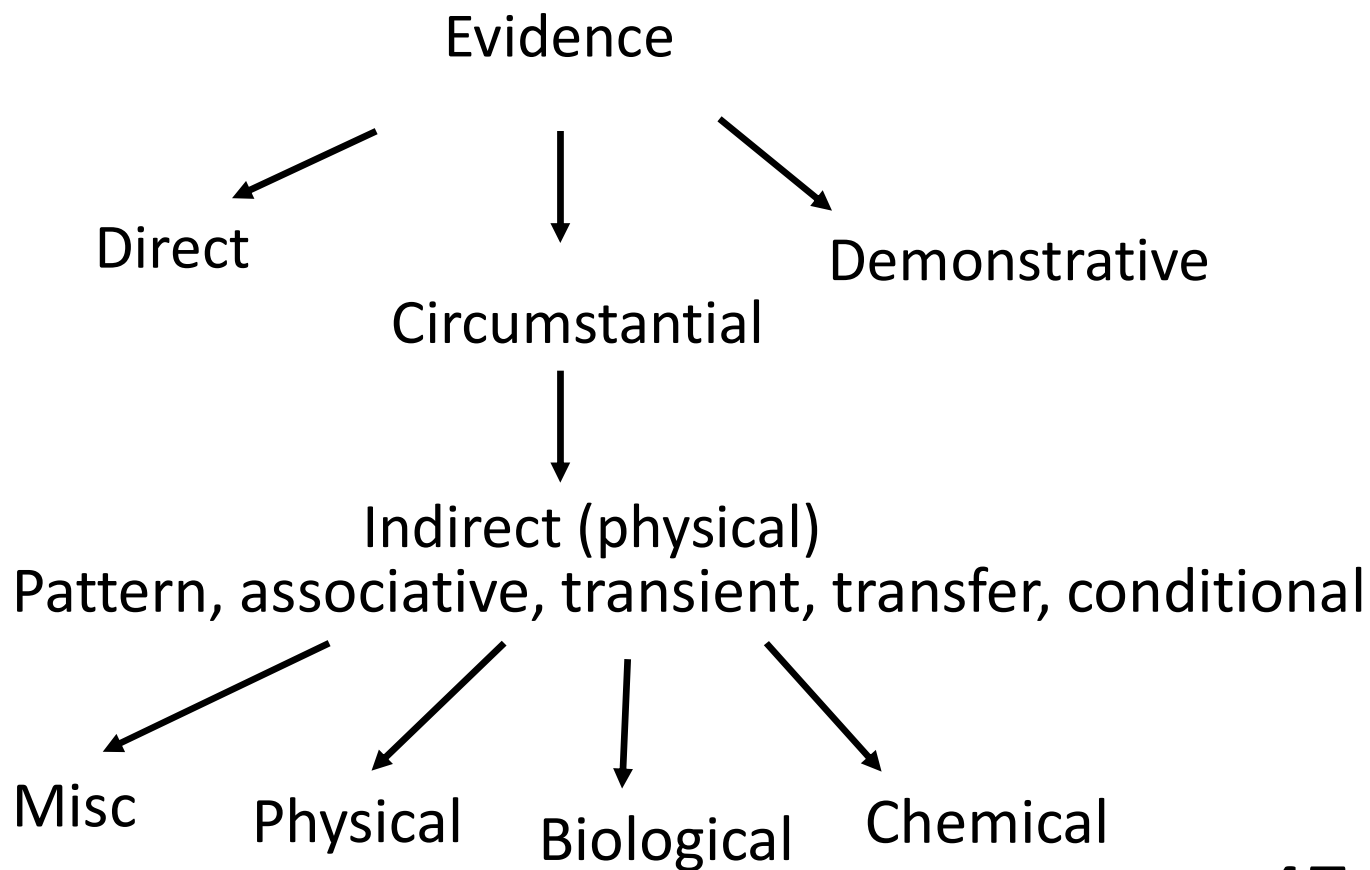
Initially treat all death investigations as homicide

- Do the type(s) of wounds found on the victim match the weapon employed?
- Could the wounds be easily self inflicted?
- Establish a profile of the victim through interviews with friends and family
- Evaluate the behavior (mood and actions) of the victim before the event
- Evaluate the behavior (mood and actions) of any suspects before the event
- Corroborate statements with evidential facts
- Reconstruct the event
- Conduct all forensic examinations to determine the facts of the case

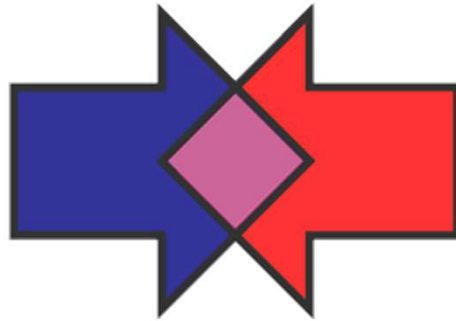


Essential Question- Day 3

- How is evidence categorized?



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- Whenever 2 objects come in contact with one another, a cross-transfer of physical evidence can occur.
- The intensity, duration, and nature of the materials in contact determine the extent of the transfer.

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Forms of Evidence

- Circumstantial Evidence
- Demonstrative Evidence
- Direct Evidence
- Physical Evidence



Circumstantial Evidence

- A form of evidence that allows a judge or jury to infer or accept a fact based on a set of known circumstances.
- A fact that can be used to infer another fact.

Example: Cookie monster is found standing by an open cookie jar with cookie crumbs on his face. The **circumstantial evidence** would indicate that Cookie Monster ate a cookie. However, he was not actually seen eating the cookie.



Acid Test: You can believe the evidence without necessarily concluding that the accused is guilty. There are other possible inferences that could be made.

Demonstrative evidence

- Evidence that is prepared by an attorney
- Used to assist the trier of fact in visualizing or comprehending other evidence.

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- **Example:** A map of the kitchen showing the cookie monster's proximity and access to the cookie jar.

– *Other typical examples...*

- *charts,*
- *maps,*
- *photographs,*
- *crime sketches*

Acid Test: Does the item *itself* actually prove the fact, or does it *demonstrate* a fact that must be proven using some other form of evidence? (Such as an eye witness or an expert witness.)

Direct or Testimonial Evidence

- first hand observations given under oath
 - eyewitness accounts – saw or heard the alleged events
 - videos
 - Confessions

 - **Hearsay**- “a statement by someone to a witness who, while testifying in court, repeats the statement”
 - Usually inadmissible

<http://www.nolo.com/legal-encyclopedia/hearsay-criminal-cases.html>

Example:

Someone **sees** cookie monster eat a cookie out of the cookie jar.



Acid Test: If you believe the evidence (ie. eye-witness testimony), then you are forced to conclude that the accused is guilty. There are no other inferences that can be made.

Physical or Indirect Evidence

- **ANY** object or material that is relevant in a crime

Example: The cookie jar with Cookie Monster's fingerprints on it.

- **Other typical examples...** weapons, tools, tool markings, fingerprints, blood, hair, skin samples, etc.
- **Acid Test:** Can the item be **labeled** and **deposited** with the court?

Myths Regarding Evidence

Myth #1: *You can't convict someone on circumstantial evidence alone.*

- many convictions are based **solely** on circumstantial evidence (rarely have witnesses)
- Probable conclusions based on circumstantial evidence can be very strong.
- Probative value - there is **no legal** distinction between direct and circumstantial evidence
 - it is up to the **trier of fact** to decide how much weight to give to any particular evidence.

Myths Regarding Evidence

Myth #2: Direct evidence (from an eyewitness) is more reliable than circumstantial evidence.

- eyewitness' recollection - often quite inaccurate.
- Eyewitnesses often make:
 - positive errors (adding false details)
 - negative errors (forgetting correct details)
- Memory influenced by a witness' :
 - expectations, beliefs, age, stress level, and how questions are posed to the witness.

**Not to mention the fact...
PEOPLE LIE!!!**

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Physical Evidence

As a result of the influences on eyewitness memory, physical evidence becomes critical.

- 1) Is generally more reliable than testimonial evidence
- 2) Can prove that a crime has been committed
- 3) Can corroborate or refute testimony
- 4) Can link a suspect with a victim or with a crime scene
- 5) Can establish the identity of persons associated with a crime
- 6) Can allow reconstruction of events of a crime

Types of Physical Evidence

Transient evidence - temporary; easily changed or lost; usually observed by the first officer at the scene.

Pattern evidence - produced by direct contact between a person and an object or between two objects.

Conditional evidence - produced by a specific event or action; important in crime scene reconstruction and in determining the set of circumstances or sequence within a particular event.

Transfer evidence - produced by contact between person(s) and object(s), or between person(s) and person(s).

Associative evidence - something that may associate a victim or suspect with a scene or with each other; e.g., personal belongings.

Examples of Transient Evidence

Odor—putrefaction, perfume, gasoline, urine, burning, explosives, cigarette or cigar smoke

Temperature—surroundings, car hood, coffee, water in a bathtub, cadaver

Imprints and indentations—footprints, teeth marks in perishable foods, tire marks on certain surfaces



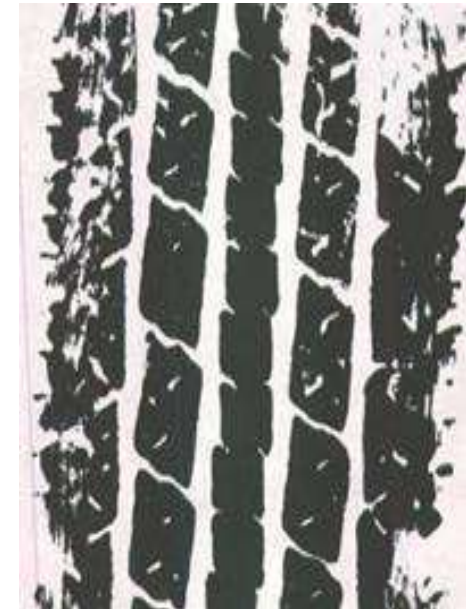
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Examples of Pattern Evidence

Pattern evidence - mostly in the form of imprints, indentations, striations, markings, fractures, or deposits

- Blood spatter
- Glass fracture
- Fire burn pattern
- Furniture position
- Projectile trajectory
- Tire marks or skid marks
- Clothing or article distribution
- Gunpowder residue
- Material damage
- Body position
- Toolmarks
- *Modus operandi*-usual way a criminal commits a crime



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Examples of Conditional Evidence

Light—headlight, lighting conditions, lights on or off

Smoke—color, direction of travel, density, odor

Fire—color and direction of the flames, speed of spread, temperature and condition of fire

Location—of injuries or wounds, of bloodstains, of the victim's vehicle, of weapons or cartridge cases, of broken glass



Vehicles—doors locked or unlocked, windows opened or closed, radio off or on, odometer mileage

Body—position and types of wounds; rigor, livor, and algor mortis

Scene—condition of furniture, doors and windows, any disturbance or signs of a struggle

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Transfer Evidence

- Produced by contact between person(s) or object(s), or between person(s) and person(s)
- Examples
 - Fingerprints
 - Hair
 - Fibers



Associative Evidence

- Items that may associate a victim or suspect with a crime scene scene
- Examples
 - Suspect has victim's credit card or watch



Classification of Evidence by Nature

Biological—blood, semen, saliva, sweat, tears, hair, bone, tissues, urine, feces, animal material, insects, bacteria, fungi, botanical material

Chemical—fibers, glass, soil, gunpowder, metals, minerals, narcotics, drugs, paper, ink, cosmetics, paint, plastic, lubricants, fertilizer

Physical—fingerprints, footprints, shoeprints, handwriting, firearms, tire marks, toolmarks, typewriting

Miscellaneous—laundry marks, voice analysis, polygraph, photography, stress evaluation, psycholinguistic analysis, vehicle identification

Reminder: **Trace** evidence: **Small** but measurable amounts of **physical or biological** material found at a crime scene.
Examples: **strand** of hair, fingerprint, DNA, **drop** of blood, pollen, gunshot residue

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Essential Questions – Day 4

- What is the difference between class and individual evidence?
- How do forensic scientists add value to Class Evidence?

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Value of Physical Evidence

- Helps establish the scope of the crime scene
- Places a perpetrator at a scene
- Connects a suspect with a weapon
- Supports witness statements or proves them false
- Connects crime scene areas (abduction, vehicle used, dump site)
- Allows for recreation of the crime scene

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Evidence can also be divided into:

Individual evidence:

- narrows evidence down to a single person or thing with a high degree of certainty.
- **ALWAYS** involves a comparison
- Cannot say it's mathematically exact that they are from the same origin; probability is high and defies comprehension.

Example: Fingerprints (probability of fingerprint match 1×10^{60})



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Examples of Unique Characteristics

- Shoes (natural wear, bubble gum)
- Paint (physical match)
- Fibers (physical match, unique “trait”)
- Fingerprints (ridge detail)
- Toolmarks (stria markings)
- Firearms (stria, firing pin markings)
- DNA (profile)

Evidence can also be divided into:

Class evidence: narrows evidence to a group of persons or things...**NEVER** to a single source.

Example: Blood Type- can be A, B, AB, O.
Finding one type at a crime scene narrows down the suspects to a smaller group.



CRIME SCENE DO NOT CROSS

Examples of Class Characteristics

- Shoes (Nike, Air Jordan, size 9)
- Paint (Cherry red 1967 Ford Mustang)
- Fibers (Red polyester fiber, braided weave)
- Fingerprints (loops, whorls, arches)
- Toolmarks (1/4" flat blade B&D screwdriver)
- Firearms (.40 caliber S&W magnum pistol)
- Arson (accelerants)
- DNA (male)



Class vs. Individual Evidence



- These fibers are **class** evidence; there is no way to determine if they came from this garment.



- The large piece of glass fits exactly to the bottle; it is **individual** evidence.

CRIME SCENE DO NOT CROSS

Adding value to Class Evidence

- Most physical evidence **cannot** be linked definitively to a single person or object.
- **Product Rule**-multiply frequency of **independently** occurring characteristics to obtain the frequency of occurrence for a particular combination
- Will not be applicable to every piece of class evidence

CRIME SCENE DO NOT CROSS

- **Probability**: frequency of the occurrence of an event
 - **Frequency**: “ the rate at which something occurs or is repeated over a particular period of time or in a given sample.”
- Between 0% (NEVER occurring) and 100% (always will occur)

Frequency of rolling a 6?
 $1/6 = 0.167 = 16.6\%$

Probability of rolling a 6 two times in a row?
 $(1/6 \times 1/6)$ or $(0.167 \times 0.167) = 2.8\%$

Probability of rolling a 6 three times in a row?
 $(1/6 \times 1/6 \times 1/6)$ or $(0.167 \times 0.167 \times 0.167)$ or 0.47%



1000

Probability is used in Forensic science to determine what the likelihood is that someone/something will have a given set of characteristics.

Example:

What is the probability that a person will have...

Blood type A, EsD, and PGM 2+2-

Blood factors	Frequency
A	26%
EsD	85%
Pgm 2+2-	2%

CRIME SCENE DO NOT CROSS

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Product Rule in Action:

Use the product rule (i.e. multiply it).

Step 1: Identify the factors and their frequencies that you are interested in.

A	26%
EsD	85%
Pgm 2+2-	2%

Step 2: Get rid of the units (units =%) by dividing everything by 100%

$$26\%/100\% = 0.26$$

$$85\%/100\% = 0.85$$

$$2\%/100\% = 0.02$$

CRIME SCENE DO NOT CROSS

Step 3: Multiply the decimal frequency of each factor

$$(0.26 \times 0.85 \times 0.02) = 0.00442$$

Step 4: We're interested in the frequency within a population of all these factors being together because we're trying to isolate ONE person who committed our crime.

So, multiply it x 100% (which would represent the entire population of people)

$$0.00442 \times 100\% = 0.442\%$$

35.7% A+ blood

6.3% A- blood

5.56% K positive

14% PGM type 1

0.38% PGM type 2

0.95% Kp(a+b+)

What is the probability that the person will be Kp(a+b+), PGM type 1, A-?

Step 1: Identify the frequencies of interest.

0.95%, 14%, 6.3%

Step 2: remove units...divide by 100%

0.0095, 0.14, 0.063

Step 3: (product rule) multiply the decimals

$(0.0095 \times 0.14 \times 0.063) = 0.0000837$

Step 4: multiply by 100% to find out the % of the population with those characteristics = 0.00837%

CRIME SCENE DO NOT CROSS

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0.00837% of people have blood with the factors
Kp(a+b+), PGM type 1, A-

How many is that? There are ~218,000 people in
Henry County

$218,000 \times 0.0000837 = 18.2$ people

<https://www.youtube.com/watch?v=6HijWmK7fHk> (from 17:59 - 21:41)

CRIME SCENE DO NOT CROSS

Value of Class Evidence?

- Weaknesses of forensic science?
 - **inability** to assign even approximate probability values for most class physical evidence.
 - Too many mass-produced items
 - statistical data to calculate probability doesn't always exist
 - For example, what is the probability that a nylon fiber originated from a particular sweater?
- Class evidence can:
 - corroborate events with data that are, as nearly as possible, free of human error and bias.

Value of Class Evidence?

- Chances of finding two **indistinguishable** items of evidence at a crime scene that came from **different** sources is low.
- As the number of different objects linking an individual to a crime scene **increases**, so does the likelihood of that individual's involvement with the crime.
- The final value of physical evidence to a case is determined in the courtroom.
 - Typically, the jury; trial judge if defendant opted out of jury by peers